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Department of Health and Environmental Sciences
Water Quality Bureau
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MONTANA NONPOINT SOURCE MANAGEMENT PLAN

1990

WATER QUALITY BUREAU
DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES
HELENA, MT 59620

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1. INTRODUCTION

Section 319 of the Federal Clean Water Act provided Montana and other states with a uniform framework for correcting and preventing human-induced nonpoint source water quality problems. Entitled "Management of Nonpoint Sources of Pollution", Section 319 was added to the Clean Water Act by passage of the 1987 Water Quality Act (PL100-4) on February 4, 1987. Section 319 requests that states prepare two basic documents:

1. A comprehensive statewide Nonpoint Source Pollution Assessment Report which identifies streams impacted by nonpoint source pollution.
2. A Nonpoint Pollution Management Plan to address the problems identified in the Assessment Report.

Table 1, in Montana's Nonpoint Source Pollution Assessment Report identifies the state's nonpoint source water quality problems. The state's Nonpoint Management Plan identifies the state's existing programs and authorities for addressing nonpoint pollution problems; specifies the general Best Management Practices (BMPs) to address Montana's nonpoint pollution categories; suggests new statewide initiatives to increase the effectiveness and improve coordination of nonpoint control efforts; proposes specific watershed demonstration projects for individual rivers and streams; and identifies estimated costs and sources of funding to support implementation of BMPs and nonpoint control measures.

Section 319 requires six principal categories of information to be included in state Nonpoint Source (NPS) Management Plans (Nonpoint Source Guidance, December 1987, U.S. EPA, Washington D.C.):

1. Best Management Practices which will be used to reduce pollution from each category or subcategory of NPS pollution, taking into account the impact of the proposed practice on groundwater quality.
2. Nonpoint Source Programs including regulatory and nonregulatory programs for enforcement, technical assistance, financial assistance, education, training,

technology transfer, demonstration projects, and monitoring/evaluation to assist in the implementation of BMPs. The lead and cooperating agencies for carrying out these programs and their specific responsibilities should be clearly identified.

3. A schedule containing annual milestones for the four-year plan which can be used to gauge the effectiveness of various programs. The schedule shall provide for utilization of BMPs at the earliest practicable date.
4. A certification of adequacy of state laws by the State Attorney General that existing laws provide adequate authority to implement the proposed management program. If additional legal authority is needed, a schedule for seeking such authority shall be adequately expeditious to allow implementation within the four-year Management Program.
5. Funding sources which are available to carry out the state program in each of the four fiscal years, in addition to assistance provided under section 319.
6. Federal consistency. The State Management Program should identify federal financial assistance programs and federal development projects which will be reviewed by the state for their consistency with the proposed NPS Management Plan.

Each of the above categories is addressed in Montana's Nonpoint Source Pollution Management Plan.

2. 319 MANAGEMENT PLAN

2.1 Introduction

The basic characteristics of nonpoint source pollution (i.e., pollution is diffuse, discharges occur by dispersed pathways, discharge is generally associated with precipitation and runoff, and discharge is related to man's use of land) make it difficult to monitor and quantify impacts of nonpoint source pollution. Impacts from nonpoint pollution episodes are often individually insignificant, but collectively and cumulatively significant. Deterioration in watersheds may occur slowly. In many instances, impacts of nonpoint pollution sources are subtle and gradual, making it difficult to demonstrate impairment to beneficial uses. When more than one nonpoint source is involved, determining the proportion of the problem attributable to individual sources can be difficult.

The nondramatic nature of nonpoint source pollution, particularly sedimentation, explains why control efforts have lagged. The subtle nature of nonpoint source pollution presents significant difficulties to the agencies charged with its monitoring and management. Additional problems result from the large number and variety of agencies, organizations, groups, and individuals involved in managing land, and protecting resources.

NPS pollution can affect both surface and groundwater. In Montana, most nonpoint pollution is caused by agriculture, silviculture, resource extraction, hydromodification, and land disposal. Construction and urban NPS sources are minor components of the total NPS pollution in Montana, and therefore, are not addressed in the plan.

Montana's NPS Pollution Management Plan emphasizes prevention to minimize impairments and future rehabilitation needs. The prevention portion of the plan will rely heavily upon education. In addition to education, Montana's Management Plan emphasizes technical assistance and financial incentives for land users to voluntarily implement Best Management Practices (BMPs) to prevent or mitigate impairment.

BMPs are methods, measures, procedures or practices used to control or reduce nonpoint source pollution. BMPs can be structural controls or nonstructural controls; they can be operation or maintenance procedures; they can be applied before, during or after pollution-producing activities.

The authority of the Montana Water Quality Act will be used to control significant quantifiable nonpoint source pollution.

The NPS Management Plan is divided into two parts: 1) the General Management Program, and 2) Specific Management Programs for each NPS pollution category. The General Management Program includes program development, assessment and monitoring, and general education. The Specific Management Programs for agriculture, silviculture, and resource extraction identify BMPs, discuss the prioritization of impaired streams, and propose demonstration projects to implement BMPs. Land disposal and hydromodification are discussed more generally since they are addressed by existing programs. The research and management needs for the Helena Valley Aquifer are discussed separately since the aquifer is affected by several of the pollution categories.

Milestones have been established for the overall Management Program (education milestones are listed separately) and for the three Nonpoint Pollution Categories (agriculture, silviculture and resource extraction). Milestones describe project accomplishments which should be achieved by a specified target date. Milestones often summarize several activities. Implementation of most milestones will be dependent upon the availability of 319 and other funds.

2.2 General Management Program

2.2.1 Program Development. The Water Quality Bureau (WQB) of the Department of Health and Environmental Sciences (DHES) is responsible for administering Montana's water quality laws and delegated federal water pollution control programs. The WQB must see that NPS programs are implemented on private and public lands which meet water quality objectives. Three agencies provide a

direct link with these lands and have signed Memorandums of Understanding (MOU) with the WQB to act as designated agencies to implement NPS programs on lands within their jurisdiction. These agencies are the U.S. Forest Service and the Bureau of Land Management on land under their respective jurisdiction and the Conservation Districts on nonfederal lands. The WQB retains oversight authority of the activities of the three designated agencies and of all other activities within the state as they relate to water quality.

These MOUs recognize that the federal agencies have control over activities on the land they manage and are in a first line position to see that proper BMPs are utilized to meet water quality objectives. The Forest Service and Bureau of Land Management have agreed to implement BMPs which meet or exceed those listed in the Management Plan.

The Conservation Districts provide technical assistance, and help coordinate the delivery of technical assistance from cooperating agencies to private landowners throughout the state. Individual conservation plans are available to landowners through the Districts which list combinations of site specific BMPs designed to meet water quality objectives. These plans are developed with the landowners' concurrence and implementation is encouraged by the District, but is voluntary on the part of the landowner. Conservation Districts also administer the Natural Streambed and Land Preservation Act which regulates activities of private entities within the beds and banks of perennial streams.

The 1989 Montana Legislature added significant silvicultural responsibility to a fourth agency, the Department of State Lands (DSL) when it passed HB 678. The requirements of this legislation are discussed in section 2.3.2 - Silviculture. In addition to these agencies, the WQB recognizes the need to utilize the financial, technical, professional and regulatory capabilities of many other federal, state and private agencies, organizations and individuals to have a successful NPS program. An NPS Task Force representing over 30 of these interests captures and coordinates

these capabilities. Members of the Task Force are representatives from state and federal agencies, and organizations concerned with environmental protection, regional planning, agriculture, silviculture, and resource extraction and are listed in the appendix. The Task Force will meet twice annually or as needed to provide assistance and guidance to the WQB in implementing and updating the 319 Management Plan. The WQB will utilize its bimonthly newsletter, The Water Column, to keep all interests up to date on current events.

2.2.2 Assessment and Monitoring is an integral part of each project to evaluate and demonstrate the effectiveness of watershed improvement projects in avoiding or reducing NPS impairments. Each of the following objectives will be accomplished to the extent possible by project monitoring:

1. Establishment of baseline or before-project stream conditions, i.e. chemical, physical, biological and habitat conditions.
2. Documentation of trends in stream conditions related to implementation of improvement projects.
3. Identification of specific pollutants or sources of pollutants.
4. Documentation that appropriate practices have been implemented and the degree of implementation of those practices.
5. Identification of the degree of compliance each project achieves relative to water quality standards and use attainability.

Monitoring plan design varies for each stream project and methods vary depending on specific conditions of the project area, suspected pollutants and resource availability. A variety of monitoring approaches are used to clarify and strengthen any conclusions drawn. Wherever possible, standardized methodology (preferably EPA protocols) is used to maintain consistency. Methodology we use is listed below.

1. BIOLOGICAL MONITORING: Use attainability by aquatic organisms is a critical goal of the watershed improvement projects. Biological monitoring is a more direct measure of beneficial use than chemical monitoring as it evaluates the actual health of aquatic communities and relates that condition to water quality. EPA rapid biological protocol III is being used due to its time and cost effectiveness. Bioassessment using algae may also be used.

   Optimal use of rapid bioassessment requires determination of unimpaired reference conditions for comparison to impaired sites in gauging project success. The WQB has macroinvertebrate reference data sets for most demonstration project streams. WQB, with the help of contractors, is currently developing an ecoregion reference community data base for Montana macroinvertebrate and algal lotic communities.

2. WATER COLUMN (CHEMICAL/PHYSICAL) MONITORING: Traditional, chemical and physical water samples are taken to explore causes and types of pollutants, and provide water quality evaluations.

3. HABITAT MONITORING: These techniques are used for projects designed to address sediment deposition, and channel or riparian alterations.

4. BEST MANAGEMENT PRACTICE REVIEWS: Initial planning of all watershed projects identifies individual practices and their desired results in achieving project objectives. BMP reviews are helpful in providing guidance and communication to project cooperators.

5. PHOTO DOCUMENTATION: Photographic techniques such as photo points or video are useful to document implementation of practices and illustrate effectiveness. Photo documentation is also useful as a medium to convey project success to the general public.

Resource limitations will require cost and time effective means of monitoring. However, to meet monitoring objectives, it is necessary that implementation and effectiveness of practices be demonstrated.

Monitoring plan design will vary for each project. Factors such as project size and anticipated duration, nature of pollutants, and resource availability will influence monitoring design. Each project will at a minimum document implementation and degree of effectiveness.

Generally, minimum monitoring efforts necessary to document changes will require before, during and after sampling frequency as well as above, intermediate and below project area sample sites.

Aside from practice reviews to evaluate implementation, rapid biological assessment protocol should be given strong consideration due to strengths listed above. However, it may be necessary to incorporate a variety of techniques to adequately evaluate the project. Flexibility in monitoring plans is important to accommodate modification if necessary. Where possible, monitoring plans should incorporate and expand on previous monitoring efforts.

Technical guides and monitoring specialists should be consulted prior to designing a monitoring plan.

TARGET DATE	GENERAL MANAGEMENT PROGRAM MILESTONES**
12/87	Conduct NPS scoping and kickoff meeting.
01/88-07/88	*Meet with designated NPS management agencies to solicit cooperation and input for the 319 program.
01/88-07/88	Contact other agencies and request information for input into the draft management plan.
03/88,03/90	Request $300,000 general fund appropriation for WQB participation in the 319 program.
04/88	*Select and prioritize impaired water bodies from Assessment Report which meet the criteria for demonstration projects.
04/88-07/88	*Meet with prospective project sponsors.
04/88	Request fund transfer from 201(g)(1)(b) of the CWA to 319(h) funds.
04/88	*Conduct grant search for private and foundation matching grant funds.
05/88	Request $300,000 reclamation and development grant to fund agricultural demonstration projects.
06/88	*Determine demonstration project priority.
06/88-07/88	Complete draft Management Plan and review with NPS Task Force.
06/88-07/88	Distribute draft Management Plan for public review and comment; conduct public meetings.
07/88	*Meet with Monitoring Subcommittee to begin developing statewide monitoring strategy.
07/88	*Set milestones for specific pollution categories.
07/88	Incorporate comments into final Management Plan.
07/88	Coordinate projects and changes in management plan with NPS task force.
07/88	Submit management plan to Governor for approval.
08/88	Submit final NPS Management Plan to EPA.
09/88	Seek technical and financial assistance on selected projects.

09/88	*Request 319 Grant from EPA for implementation of Management Plan.
09/88	Design annual report forms for designated agencies.
10/88	*Prepare grant applications to selected potential funding sources.
03/89-05/89	*Design, field test and revise stream reach non-point source assessment form (copy in appendix.)
04/89-10/92	*Coordinate NPS monitoring and asssessment activities statewide
06/89	*Develop and implement statewide assessment and monitoring strategy.
06/89	Target streams previously identified as impaired (i.e. 208 program, ASIWPCA survey, etc.) for stream reach assessments.
06/89-10/92	*Conduct stream reach assessments.
06/89-10/92	*Establish NPS management work plans for demonstration projects on impaired streams that includes appropriate trend monitoring to evaluate the effectiveness of the project.
08/89	*Submit annual report to EPA.
10/89	*Update Management Plan, as needed, and review with NPS Task Force.
11/89	Submit grant request for 319 funds to EPA with FY91 workplan.
01/90-10/92	*Rank and prioritize streams by severity of NPS impacts and develop monitoring plans to increase assessment resolution for impaired streams.
06/89 - 10/92	Review water quality research needs and identify specific needs through NPS task force.
Semi-Annual	Meet with NPS Task Force and State Food and Agriculture Committee to discuss NPS progress.

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* Ongoing activity
** Education milestones are listed separately.

2.2.3 Education. Because so much of this program depends upon voluntary cooperation by the public, an active information and education program is critical. The more people know and understand about the causes, effects and solutions of nonpoint pollution the less likely they are to be part of the problem, and the more likely they are to become part of the solution. Therefore, an education program is designed to promote voluntary corrective action by landowners and to prevent or reduce future problems by increasing general public awareness.

The Water Quality Bureau of DHES is the lead agency for NPS management plan implementation and oversight. Most of the educational products will be developed and delivered through existing programs and systems, i.e. Extension Service, DNRC, DSL, Conservation Districts, etc. However, because all of these entities have different interests and concerns, the DHES will provide a water quality education coordinator to help maintain a water quality focus and minimize duplication. DHES will provide additional financial and technical assistance to help develop educational programs. DNRC will be responsible for assisting in the development and implementation of education programs in agriculture and silviculture.

Montana proposes a statewide education program to address nonpoint source pollution as a whole. The program will be directed at landowners, land users, and students. Specific education programs that target each pollution category, e.g. agriculture, forestry, and resource extraction are described in those sections. The methods described in the education program and milestones are considered to be the most effective means of informing and involving the various sectors of the public in water quality improvement and protection efforts.

There is a need to get the principal NPS Demonstration Project Sponsors (Conservation Districts), and agencies and interested organizations together to discuss how to implement an effective NPS program, how to efficiently plan, fund and implement demonstration projects, and how to implement and coordinate education programs.

The WQB has initiated work on such a conference to be held in January 1992. The Montana Association of Conservation Districts will be the primary sponsor for the meeting. The Soil and Water Conservation Society and representatives from more than 20 state and federal agencies, organizations and groups would assist and cooperate in planning and conducting the conference.

This meeting would help implement Montana's NPS program by showing how our cooperative, voluntary program can be used to avoid or at least improve water quality problems. A review of completed water quality projects and problems and possible solutions would provide impetus for continued improvements in Montana's water quality.

Proposed topics include but are not limited to: demonstration projects, grazing management in riparian zones, agricultural chemicals and nutrients, NPS education and information activities, groundwater, wetlands, water quality monitoring, riparian habitat management, and technological development.

The milestones for the statewide education program are described below.

TARGET DATE	EDUCATION MILESTONES
05/88-08/88	Establish Riparian Education Committee to design riparian management information programs for agricultural landowners.
05/88-05/91	Cooperative Extension Service launches three-year statewide groundwater protection education program.
07/88-09/92	Develop riparian management information booth for use at conventions, county fairs, and similar public events.
08/88-12/88	Identify and describe riparian management demonstration areas on federal, state, and private lands to use for educational programs and field tours.
10/88-11/89	Join with landowner groups to sponsor a brochure describing effective riparian management techniques.

03-89-10/92	Conduct educational field tours on effective riparian management for local landowners, conservation districts, and land managers.
03/89-03/92	Initiate Montana Salinity Control Association education program to control saline seep.
01/89-09/92	Summarize local, state, and federal sources of grants and loans for local riparian improvement projects. Publicize availability to landowners, conservation districts and other interested organizations.
03/89-9/92	Provide information to Conservation District supervisors on agriculture, silviculture and mining BMPs, and on how to implement the NPS Management Plan in their counties.
03/89-03/91	Incorporate Nonpoint Source Pollution (NPSP) education materials into teacher training programs. (Conservation Districts Division Directory of Teacher Training Programs identifies appropriate programs.)
09/89-09/92	Develop water quality monitoring programs in six high schools; if successful, expand program to 12 schools.
08/90	Host regional Biomonitoring Workshop.
01/92	Conduct statewide NPS water quality conference.
09/90-92	Publish bimonthly newsletter.
12/89-09/92	Incorporate NPSP education materials into 1) Agriculture in Montana Schools 2) youth camps; 3) Project Aquatics; 4) 4-H programs; and 5) conservation district sponsored Youth Conservation Days.

2.2.4 General Management Program Funding Needs. Adequate funding for the management of NPS pollution is heavily dependent upon sufficient and continuing 319 appropriations from Congress. Montana utilized a one-time transfer of Section 201 (g)(1)B funds (Wastewater Treatment Construction Grants) to the NPS program in 1989. This source of funds will not be available in future years. The state has identified numerous federal, state and private funding sources that may be utilized for program development and

administration, and project implementation. Those programs are described in detail in Section 3.3 of this document. The following list identifies funding sources that are likely to be used for program development and administration (PD&A), demonstration projects (DP) or educational programs (EP). The nonfederal programs have been designated by EPA as eligible for the 60% federal/40% state or private match required for 319 demonstration projects.

Federal

Agricultural Stabilization & Conservation Service

- Agricultural Conservation Program - maximum of $3,500 available annually to producers (may receive up to $17,500 on 5-year contract) - (DP).
- Agricultural Conservation Program - Special Water Quality Projects - funding available annually at federal level to fund priority watershed projects as designated by the State and applied for by ASCS state office - (DP).

Soil Conservation Service

- Great Plains Conservation Program - up to $35,000 available for long-term contracts to producers who enroll their entire operation into program for conservation planning - (DP).
- Public Law 566 - funding available at national level and provided to states for various watershed protection and flood prevention projects normally sponsored by conservation districts: costs variable dependent upon specific projects - (DP).

USDA

A USDA National Water Quality Initiative was funded in federal fiscal year 1990. This initiative is a joint effort to implement USDA's Water Quality Program Plan. Funding is part of the USDA 5-year Water Quality Plan and is expected to continue on an annual basis. USDA will fund Hydrologic Unit projects, Demonstration

projects and Special Water Quality ACP projects. All of these projects provide financial and technical assistance for implementation and are oriented toward solving existing NPS problems. Projects vary primarily in leadership and scope.

Hydrologic Units generally cover an entire watershed and are under SCS leadership. USDA Demonstration projects may cover more than one watershed and are generally of regional or national significance and are under Extension leadership. The USDA Special Water Quality projects generally deal with either a part of a watershed or an entire watershed. They are under the leadership of ASCS and focus on financial assistance to cooperators to implement BMPs. All of the projects are cooperative ventures between USDA agencies and landowners.

To receive funding, proposed projects must not only address successful remediation of water quality problems, but also exhibit a strong degree of cooperation between agencies and landowners. To assure federal consistency with state Nonpoint Source Management Plan, all USDA projects must be listed in the Nonpoint Source Assessment and or approved by the WQB.

Environmental Protection Agency

- Clean Water Act
- 201(g)(1) - Governor's 20% discretionary set-aside of construction grants funds are available to the state for NPS program development and administration and for project implementation - for FY90, the state will fund 4 NPS projects from this source - (PD&A, DP, EP).
- 205(g) - construction grants administration funding - no funding is available in Montana to apply to NPS activities.
- 205(j)(1) - water quality management planning funds available for NPS program development and administration, planning, and assessment. Forty percent of the state's annual allocation of these funds ($40,000 is passed through to Regional Public Comprehensive Planning Organizations (RPCPOs) for pollution control planning and assessment - (PD&A).

- 205(j)(5) - NPS program development, administration and project implementation - state's allocation is approximately $100,000 per year - (PD&A, DP & EP).
- 319(h) - NPS program implementation (for administration education, demonstration projects and monitoring, $658,447 provided by EPA in 1990).
- 319(i) - for groundwater program; no funding yet, however funding for groundwater was included in 319(h).
- 603(2)(c) - State Revolving Fund - we do not envision utilizing this funding source for NPS activities. Funds may be used by individual landowners to borrow the money they need for their share of the projects.
- 604(b) - water quality management planning funds available for same purposes as 205(j)(1) with similar pass-through requirements - (PD&A).

State

Department of Natural Resources & Conservation

- Reclamation Development Grant Program - grants available to public entities biennially for reclamation projects and projects of critical state need - approximately $2.8 million was available for FY90 - 91 biennium, much of which was committed by the Legislature to water quality related projects - (PD&A, DP & EP).
- Water Development Program - grants and loans available to public and private entities for water development projects; $285,000 available this biennium to projects, many of which will contribute to water quality improvement - (DP).
- Renewable Resource Development Program - grant program to public entities for renewable resource development -projected revenues for this biennium are $1,139,000 which has been committed to projects, including some that will improve NPS pollution problems - (DP & EP).

Water Quality Bureau, Department of Health and Environmental Sciences

- Construction Grants Program - Governor's 20% discretionary set-aside may be used for NPS control activities - explained above under EPA, 201(g)(1) - (PD&A, DP & EP).
- Water Quality Management Funds - may be used for water quality planning and assessment by entities of state or substate government - explained above under EPA, 205(j)(1), 205(j)(5), and 604(b) - (PD&A).

Department of State Lands

- Abandoned Mines Lands Reclamation Program - funds available for reclamation of abandoned mining operations funding variable. Abandoned coal sites have been completed by 1990; nearly $5 million per year will then be available for hardrock mine reclamation which consists mainly of reclamation of abandoned mine operations - (DP)

Department of Fish, Wildlife and Parks

- River Restoration Program - funds available for aquatic habitat improvement - funding dependent upon license sales - projections are that about $110,000 per year will be available; most work done with these funds will benefit the NPS program - (DP).

Private

Foundation Grants

- private funds available to successful applicants. The state has queried 38 foundations. No estimates on the amount of available funding - (PD&A, DP & EP).

Conservation Organizations

- funds available for specific projects or programs of interest to organization. No funding estimates available - (PD&A, DP & EP).

Current projections are that funding will be available for program development and administration throughout the initial phases of the program, and that implementation funds will be sufficient to fund 3-5 demonstration projects per year. The State will continue

to investigate additional sources of funding, but is not optimistic that there are many untapped sources available. We see this as one of the largest impediments in the program. At present, the most promising aspect is to work with the above listed agencies to coordinate available funds under existing programs.

Annual anticipated funding needs for the general management program are as follows:

A. Administration
One full-time staff member at DHES $ 35,000

B. Assessment Program - See Assessment Report

C. Monitoring Program
Two full-time staff members at DHES 50,000
Travel/Per diem 11,250
Equipment/Lab Support 15,000

D. Program Implementation
Two full-time staff members at DHES 60,000

E. Education

The following budget describes the financial support required to fulfill the education milestones. The NPS education officer will coordinate and implement the general education programs, and coordinate the specific education programs developed for each pollution category. The NPS Task Force will provide general guidance and direction.

1. General Education
Full time DHES staff person & Materials $108,236*
Materials to include:
pamphlets
video
education booth and materials
curriculum material development and printing
monitoring education
newsletter

2. Groundwater Education
(See Agriculture Section)
Development and distribution of
education materials by MT Salinity
Control Association $13,500
and Water Quality Bureau

3. Herbicide/Pesticide Education
(See Agriculture Section)
Development and distribution of education materials by MT Department of Agriculture $7,500

Education Total $129,236

* on a two-year basis

2.3 Management Program for Nonpoint Pollution Categories.

Montana has selected initial watershed demonstration projects for agricultural, resource extraction and silvicultural categories. Proposed projects were subjected to a three-tier selection process: 1) projects had to meet basic threshold requirements, 2) projects had to receive a high ranking in a priority system format, and 3) projects are selected for action by the Water Quality Bureau and reviewed by the NPS Task Force.

Proposed demonstration projects must pass the threshold criteria before progressing in the selection process. Projects must be on the list of impaired or threatened water bodies in the Montana Nonpoint Source Assessment Report and/or current 305b reports. If they are not currently listed, the Water Quality Bureau must concur that the waterbodies qualify for addition to the list. Landowners and sponsors must exhibit a spirit of cooperation and willingness to implement and maintain necessary BMPs. Proposed project sponsors must have either a project implementation plan or the capability to produce such a plan within the time the project is being considered for acceptance. This plan must document the problem, proposed solutions and results, costs, schedule for implementation, proposed monitoring strategy, and proposed sources of funding. Sufficient funding must be obtainable for each project to address identified NPS impacts.

Projects which meet the minimum threshold criteria are then subjected to a ranking system. This system is subject to change with concurrence of the NPS Task Force and the Water Quality Bureau. Major factors and approximate weight are as follows:

1. Severity and extent of impact to beneficial uses - 40%
2. Technical and financial feasibility - 40%
3. Demonstration value for transfer to other areas - 20%

100%

The severity and extent of impact to beneficial uses takes into account the number of beneficial uses impacted, severity of impacts, relative value of those impacts and total area impacted. Beginning during the spring of 1989 and continuing throughout the program, the Water Quality Bureau will perform progressively more detailed assessments of impaired waterbodies as the state's nonpoint problems are better quantified and documented. This stratification will result in the priority waterbodies being addressed first. This process will identify water bodies with the most severe NPS problems and to which the application of BMPs have the best chance for restoring beneficial uses.

An analysis of financial and technical feasibility involves weighing the capabilities of BMPs to mitigate impairments, cost of implementation and value of anticipated results relative to project cost.

A major concept of the demonstration projects is to learn from the project and be able to use and apply the results on other impaired waterbodies. Projects which have far-reaching applicability for transfer of technology receive the highest ratings.

Agricultural watershed demonstration projects may be proposed and developed by a variety of sources including government entities and concerned citizens. Proposed projects will be reviewed and evaluated by the NPS Task Force. Final project selection will be performed by DHES-WQB. Conservation Districts, as designated water quality management agencies, will usually serve as project sponsors. There may be instances where other organizations such as counties may serve as project sponsors.

Milestones and BMPs for hydromodification, land disposal, and construction activities are not delineated because they are addressed by state and federal regulatory programs, which stipulate

the formulation and application of BMPs. Efforts will continue to evaluate and improve the effectiveness of these programs.

Tables 2 and 3 present a listing of regulatory programs and sources of financial and technical assistance available to help implement BMPs for each category. These programs and assistance sources are described in greater detail in Chapter 3.

2.3.1 Agriculture

Introduction

Agriculture is Montana's number one industry and is the prevalent land use on nearly two-thirds of Montana's lands. Agriculture also generates nearly 46 percent of total nonpoint source pollution. The main agricultural pollutants are sediments and nutrients.

Best Management Practices (BMPs)

Montana will use selected Soil Conservation Service (SCS) standard conservation practices and specifications for agricultural BMPs. A list of these BMPs and the categories of pollution to which they relate are in the appendix. A complete description of each agricultural BMP can be found in the Field Office Technical Guide in SCS field offices and in Montana's Best Management Practices Manual at the WQB office in Helena.

These BMPs were adopted after a public comment period in which there were no negative comments about their acceptance. These BMPs have an added advantage in that the three principal agencies using them the most are already familiar with them. Conservation Districts have historically been involved with development of these BMPs and interagency conservation planning with the BLM and USFS and Conservation Districts have utilized them. Both the BLM and USFS have agreed to implement programs that meet or exceed these BMPs. The application of agricultural BMPs for NPS control is voluntary. However any agricultural practice which causes pollution of Montana's water is subject to regulation under the Montana Water Quality Act.

The Conservation Districts, Soil Conservation Service,

Agricultural Stabilization and Conservation Service, and Extension Service provide primary assistance and encouragement for implementation of these agricultural BMPs.

SCS Technical Guides group individual BMPs to be considered for each land use into Resource Management Systems (RMS). Montana encourages implementation of all BMPs listed for each RMS but recognizes that only those BMPs relating to water quality elements are essential for planning and implementation of water quality standards. The selection of BMPs within each RMS will be made on a site-specific basis in cooperation with individual landowners.

New BMPs addressing pesticide application, fertilizer management, irrigation diversion structures and streambank stabilization will be added as they are developed.

Through assessment, monitoring and program oversight, the WQB will ascertain whether prescribed RMSs/BMPs are implemented and if they are meeting water quality objectives. If there are deficiencies, BMPs will either be modified or new RMSs/BMPs prescribed.

Table 1. Existing Nonpoint Source Authorities

	LEAD AGENCIES	NONPOINT SOURCE CATEGORY					
		AGRICULTURE	FORESTRY	RESOURCE EXTRACTION	HYDRO-MODIFICATION	LAND DISPOSAL	CONSTRUCTION
STATE AND LOCAL LAWS							
MT Water Quality Act	WQB/DHES	X	X	X	X	X	X
Sanitation in Subdivisions Act	WQB/DHES					X	
Solid Waste Management Act	SHWB/DHES					X	
MT Hazardous Waste Act	SHWB/DHES					X	
Stream Protection Act (124)	DFWP				X		X
Natural Streambed and Land Protection Act (310)	CDs	X	X	X	X	X	X
Land Use Ordinances	CDs	X	X		X		X
MT Environmental Policy Act	EQC	X	X	X	X	X	X
MT Major Facility Siting Act	DNRC				X		
MT Strip and Underground Mine Reclamation Act	DSL			X			
MT Opencut Mining Act	DSL			X			
Hardrock Mining Statutes	DSL			X			
FEDERAL LAWS							
Federal Clean Water Act	EPA	X	X	X	X	X	X
CERCLA/SARA	EPA			X		X	

Table 1. Existing Nonpoint Source Authorities (Continued)

State Agencies

WQB-DHES	Water Quality Bureau, Department of Health and Environmental Sciences
CDB-DNRC	Conservation Districts Bureau, Department of Natural Resources and Conservation
DOA	Department of Agriculture
DSL	Department of State Lands
DFWP	Department of Fish, Wildlife and Parks
SHWB-DHES	Solid and Hazardous Waste Bureau, Department of Health and Environmental Sciences

Federal Agencies

EPA	Environmental Protection Agency
ES	Extension Service, USDA
OSM	Office of Surface Mining

Local Agencies

CDs	Conservation Districts

Table 2. Financial and Technical Assistance Programs and Agencies

	PROGRAM TYPE & AGENCY FINANCIAL & TECHNICAL		NONPOINT SOURCE CATEGORIES AG	FOR	RES EXT	HYDRO	LAND DISPOSAL	CONSTRUCTION
FEDERAL								
Agricultural Stabilization and Conservation Service	ASCS							
Annual Conservation Program	ASCS	SCS	X	X		X		
Conservation Reserve Program	ASCS	SCS, ES	X					
Rural Clean Water Program	ASCS	SCS	X					
Soil Conservation Service								
Great Plains Conservation Program	SCS	SCS	X			X		
Resource Conservation and Development	SCS	SCS	X	X		X		
Public Law 566	SCS, FmHA	SCS	X	X		X		
Abandoned Mine Lands	OSM, DSL	DSL			X			
Farmers Home Administration	FmHA		X	X		X		
Bureau of Reclamation	BR	BR	X			X		X
Environ. Protection Agency	EPA	EPA	X	X	X	X	X	X
Forest Service	FS	FS	X	X	X	X		
Bureau of Land Management	BLM	BLM	X	X	X	X		
STATE								
Depart. of Natural Resources and Conservation								
Renewable Resource Develop.	DNRC		X	X	X	X	X	X
Water Development Program	DNRC		X	X	X	X		X
Resource Indemnity Trust Pro.	DNRC		X	X	X	X		X
Cons. Dist. Proj. Grant	DNRC		X	X	X	X	X	X
Riparian Management Grant	DNRC		X	X	X	X		X
Streambank Reclamation Grant	DNRC		X		X	X		
Rangeland Imprmnt Loan Pro.	DNRC		X					
Department of State Lands	DSL		X	X	X	X	X	X
Department of Health and Environmental Sciences	DHES	DHES	X	X	X	X	X	X
Department of Agriculture		DOA	X	X				
Salinity Control Association	SCA	SCS	X					
Conservation Districts	CDs	CDs	X	X	X	X	X	X

Education

To promote riparian area protection and reduce agriculturally related NPS pollution, a Riparian Education Committee was established in May 1988. The Committee, spearheaded by DNRC/CDB and comprising agriculture and landowner organizations, has identified several educational activities to cooperatively pursue. These include a compilation of riparian management information, publication of a riparian brochure, location of demonstration areas, development of a riparian management information booth and presentations, and conducting educational field tours for private landowners, agriculture organizations, conservation districts, and others. These proposed activities are listed under the Agriculture Milestones.

A number of other NPS-related education programs are currently in progress. The Cooperative Extension Service launched a three-year groundwater protection and education program in May 1988, which targets groundwater pollution originating from agriculture and its impact on all user groups. The Flathead Basin Commission uses state funds to develop local information and education activities which address NPS control. Additional education programs to address groundwater pollution from saline seep and pesticide/herbicide contamination have been proposed by the Department of Agriculture, Water Quality Bureau and the Montana Salinity Control Association.

The Montana Salinity Control Association, organized in 1981, works directly with landowners to reverse saline seep on private agricultural lands. However, the salinity problem continues to grow throughout central and eastern Montana. Educational materials which focus on the prevention of saline seep and identify locations of lands impacted by saline seep will be developed.

The Extension Service at Montana State University has developed an extensive groundwater education program. A description of the specific work plan is in the appendix. Water quality topics which will be addressed in the education program are:

* Groundwater - general characteristics
* Effects of agriculture and land use on groundwater
* Groundwater and crop nutrition - BMPs for fertilizing
* Agricultural pesticides and groundwater contamination
* Private well water testing
* Groundwater and drinking water contaminants: causes, sources and likely risk levels
* Home water treatment systems
* BMPs for fuel storage tanks and fuel handling
* Septic tank management and protection
* Managing manure, feedlots, and runoff as potential groundwater contaminants
* Leaching potential for agricultural chemical applications

While widespread contamination of groundwater from pesticides has not been documented, several isolated occurrences of pesticide-related groundwater degradation have taken place. To minimize future impacts, the Department of Agriculture and Water Quality Bureau have initiated an agricultural pesticide education project with 319 funds. The Montana Extension Service has developed an extensive groundwater quality education program which addresses agricultural pesticides and fertilizers (see appendix for descriptions and target dates). The Montana Department of Agriculture conducts annual initial training and semi-annual recertification training for pesticide applicators. The Montana Salinity Control Association informs the public about saline seep by providing information articles and tours to agriculture publications and organizations upon request, participating in at least two SCS training sessions each year, and presenting at least one technical paper at a national conference each year. The Soil Conservation Service is accelerating water quality training for its employees in nonpoint source pollution control, and is updating the technical guides to reflect water quality components.

TARGET DATES	AGRICULTURE MILESTONES
01/88	Adopt SCS standard conservation practices as Montana's agricultural BMPs.
02/88	Select two priority streams for agricultural watershed demonstration projects: Otter Creek and East Spring Creek (See following specific Milestones and discussion for each project.)
03/88	Select two priority streams for BMP demonstration projects: Upper Musselshell River and Godfrey Creek (See following specific Milestones and discussion for each project.)
05/88	Riparian Education Committee established to promote proper management of riparian areas on private property; Education program designed and implemented for 1988-89 - DNRC, SCS, MT STOCKGROWERS, WQB.
06/88	Most recent riparian management education materials and videos distributed to Committee members (will be updated annually) - DNRC.
08/88	Survey of riparian demonstration areas on BLM and private lands - DNRC.
09/88	Riparian management display completed, illustrating the effects of different grazing management systems; display has been used by the Montana Water Resources Association, Montana Stockgrowers, Montana Public Lands Council, Montana Woolgrowers, Montana Chapter American Fisheries Society, Montana Association of Conservation Districts, and others - DNRC.
10/88 - 02/89	Biennial recertification training for agriculture pesticide applicators with a water quality protection component - MONTANA DEPARTMENT OF AGRICULTURE.
03/89	Initial training for agriculture pesticide applicators with a water quality component - MONTANA DEPARTMENT OF AGRICULTURE.
03/89	Developed tentative agenda and publicity strategy for riparian management workshops for landowners; contacted conservation districts, grazing districts, county extension agents, tribes, and agricultural organizations to offer the services of the Riparian Education Committee in setting up a riparian workshop; possible locations: Missoula, Flathead, Silver Bow, Yellowstone, Meagher, Choteau, Beaverhead, and Madison. At least three workshops will be held summer 1989 - DNRC.

04/89 Nine Mile Creek inventory plan developed with Missoula Conservation District to identify sediment sources and management practices which would improve water quality and aquatic habitat; inventory took place summer/1989 - SCS, MISSOULA CONSERVATION DISTRICT, WATER QUALITY BUREAU, DNRC, DFWP, USFS.

04/89 Paper on salinity control and agriculture presented at NACD/NPS conference in St. Louis - MT SALINITY CONTROL ASSOCIATION.

05/89 - 09/89 Four workshops were held for Conservation District employees. A presentation on critical water quality issues in the state is planned - DNRC, WQB.

06/89 Riparian management brochure published - DNRC.

06/89 Survey of riparian demonstration areas on Forest Service lands - DNRC

07/89 Update SCS Technical Guides with water quality specifications that will be required in Food Security Act farm plans - SCS.

07/89 Newsletter articles and tours on salinity control provided to conservation districts, agricultural organizations, etc., upon request - MT SALINITY CONTROL ASSOCIATION

07/89 09/91 Develop school curriculum for 7th and 8th graders on past, present, and future management of the Clark Fork River Basin - MISSOULA CONSERVATION DISTRICT.

10/89 - 10/92 Cooperate in and encourage implementation of USDA Water Quality Initiative - DHES, SCS, ASCS, CES.

11/89 Clark Fork Basin conference to develop basin-wide land and water quality management goals for landowners and water users; committee formed to address specific issues - NORTHERN LIGHTS INSTITUTE.

01/90 Adopt pest management and nutrient management BMPs and include as part of agriculture BMPs with identification code - DHES.

01/90 - 01/92 Consider development and adoption of alternative BMPs or expand existing BMPs for streambank stabilization and irrigation diversion structures; include as part of category BMPs with identification code - DHES.

01/90	Prepare funding request for 1-3 "hydrologic unit" water quality project from USDA - DHES, SCS.
04/90 - 09/90	Conduct at least three landowner riparian management workshops in the state - DNRC, WQB.
06/89 - 10/92	Adopt available SCS Resource Management Systems as part of BMPs; review RMS list, update and revise as needed - DHES.

WATERSHED DEMONSTRATION PROJECTS. If adequate funding can be obtained, Montana's NPS Management Program will promote two major types of demonstration projects. One type will address entire watersheds selected from the assessment report. In addition to exhibiting moderate or severe impairment, selected watershed projects must be achievable in terms of solutions, funding and landowner cooperativeness. The second type of project promotes installation of demonstration BMPs on identified problem streams without attempting to blanket the entire watershed with BMPs. Some innovative and unproven BMPs are candidates for this type of project. Major objectives of demonstration projects are documented water quality improvements and transfer of technology to other watersheds.

OTTER CREEK. Otter Creek has been selected as a watershed demonstration project. The Montana Assessment Report lists Otter Creek as a 31-mile-long watershed in Sweet Grass County, moderately impaired primarily by agriculture. A recently completed stream inventory delineated problems at Otter Creek such as mass wasting banks, irrigation return flows, grazing management and channel changes. A cooperative effort is underway with the SCS, USFS, Sweetgrass Conservation District, DFWP, DHES-WQB, DNRC-CDB, and the local landowners to assess the water quality problems identified on the stream, its nonpoint source pollution problems and install appropriate BMPs. SCS will provide technical and planning leadership. The WQB will provide project coordination and secure funds to complete the project. The following is a listing of milestones proposed for this project:

TARGET DATE	OTTER CREEK WATERSHED DEMONSTRATION PROJECT
02,07 & 10/88	Schedule meetings with Sweetgrass CD.
02/88	Select Otter Creek as a priority watershed.
02/88	Request CD sponsorship of Otter Creek Project.
03/88	Schedule technical team meeting.
03/88	Describe water quality problems.
04/88	Develop assessment of potential solutions
06/88-10/88	Conduct Field assessment with technical team to prioritize problems and identify appropriate BMPs.
06/88-ongoing	Document project with VCRs and interviews (before, during, and upon completion.)
09/88	Submit grant request for EPA funds [20(g)(1)(b)].
11/88	Meet with landowners to discuss BMP selection and implementation.
12/88	Submit grant request to ASCS for ACP specialist Water Quality Project funds.
01/89-10/89	Select BMPs.
01/89-10/89	Complete design of Otter Creek watershed demonstration project and review with CD and landowners.
01/89-10/91	Develop and implement monitoring strategy for Otter Creek.
03/89	Prepare information releases for Otter Creek project.
03/89-ongoing	Use district information program to publicize project.
04/89	Submit grant request to EPA for transfer of 201(g)(1)(b) funds - approved.
04/90-10/91	Implement BMPs with technical assistance, as needed.
09/90,91,92	Annual progress report submitted to EPA.

OTTER CREEK FUNDING NEEDS. The Soil Conservation Service has completed a preliminary assessment of needed conservation practices BMPs for Otter Creek. Total cost is $231,407. The practices and BMPs may be implemented for approximately $216,407--90 percent cost share that was approved and secured. These figures may be adjusted based on BMPs mutually agreed upon by the interagency technical team, landowners, and the Conservation District. To date, the following BMPs have been prescribed:

Irrigation Water Management	$ 61,014
Establish Permanent Vegetative Cover	2,996
Establish Critical Vegetative Cover	63,216
Stream Protection & Stabilization	80,832
Range & Grazing Land Protection	3,444
Miscellaneous & Administration	4,905
	$216,407

EAST SPRING CREEK. East Spring Creek is a tributary to the Flathead River in Flathead County. The water quality of the creek has been degraded by excessive sedimentation, irrigation withdrawals, and livestock grazing on the banks of the stream. Several dams slow the water and further increase sediment deposition, creating barriers to spawning trout and salmon. The Flathead Conservation District initiated a stream improvement project on the upper portion of the watershed during 1987. The NPS program will fund "Phase II" of the project which will include many BMPs that were not included in the original stream improvement project due to financial limitations of the DNRC grant. WQB and the CD will jointly conduct an educational program to publicize the benefits of the project. A list of proposed milestones for this project follows.

TARGET DATE	EAST SPRING CREEK MILESTONES
04/88	Schedule meetings with Flathead CD.
05/88	Request Flathead CD to prepare rehabilitation plan for East Spring Creek.
07/88-6/90	Work with CD to determine which BMPs should be funded.
07/88-6/90	Prioritize BMPs to be funded.
04/89	Submit grant request for EPA funds - approved.
09/88-9/91	Develop and implement monitoring strategy.
06/90	DHES Project agreement signed with Flathead CD to sponsor project.
09/90-09/91	Implement BMPs during this period.
10/90-10/92	Use district and WQB information program to publicize project.
10/90-10/92	Document project with VCRs, interviews, etc.
11/90,91	Send progress report to EPA.

EAST SPRING CREEK FUNDING NEEDS. BMPs to improve water quality in East Spring Creek have been partially funded by the State under the RDGP program at DNRC. $75,000 should complete the implementation of proposed practices. The estimated project budget submitted by WQB to EPA and approved is:

Fencing	$ 9,207
Excavation	$ 2,081
Flow control structures	$ 28,626
Erosion control	$ 3,070
Fish habitat structures	$ 1,740
Revegetation	$ 5,000
Monitoirng	$ 12,790
Project planning & management	$ 12,486
Total	$ 75,000

MUSSELSHELL RIVER. The Musselshell River is a tributary to the Missouri River in central Montana. Water quality of the river is impaired primarily as a result of past channelization from railway and highway construction. Sediment from streambank

alterations, livestock grazing practices and surface runoff has also degraded water quality and aquatic habitat. The Upper Musselshell Conservation District in 1988 has drafted a RDGP grant application to implement a corridor management program addressing approximately 70 miles of the river in Meagher, Wheatland and Musselshell counties. That grant was not funded, but the WQB was successful in obtaining $125,000 for (201(g)(1)(b) funds. Demonstration BMPs will be implemented on approximately ten sites to illustrate the advantage of innovative, cost-effective stream protection and improvement measures. The milestones for this project follow:

TARGET DATE	UPPER MUSSELSHELL RIVER MILESTONES
03/88-10/90	Meet with Upper Musselshell CD to discuss contract.
06/88-09/88	Complete corridor inventory.
09/89	Submit grant request to EPA - approved.
12/88	Complete corridor management plan.
03/89-09/90	Coordinate selection of BMPs with CD and landowners.
06/89-06/90	Develop monitoring strategy.
10/90-10/91	Implement selected BMPs.
11/90,91	Submit annual progress reports to EPA.

MUSSELSHELL RIVER FUNDING NEEDS. The cost of proposed BMPs are:

Project design	$ 10,000
Drop structures, barbs & revetments	$ 70,000
Fencing, sloping & revegetation	$ 30,000
Education program	$ 5,000
Project management and administration	$ 10,000
Total	$125,000

THREE MILE CREEK

Three Mile Creek is a tributary to the Bitterroot River in Ravalli County. Three Mile Creek is approximately 15 miles long

and is heavily impacted by livestock concentration on small acreage tracts. Eight miles of the creek frontage is owned by 41 landowners. The heavy sediment load in this creek has impaired instream fisheries as well as filling waterfowl ponds on the Lee Metcalf Wildlife Refuge reducing their value for waterfowl use. The estimated project budget is:

Fencing	$ 26,250
Filter Strips	$ 75
Grade Stabilization	$ 60,000
Livestock Pipeline	$ 56,450
Streambank Protection	$ 18,000
Tanks	$ 16,800
Total	$126,750

NINEMILE CREEK

Ninemile Creek is a 28-mile long tributary to the lower Clark Fork River. The major impairment in Ninemile Creek and this section of the Clark Fork River is reduced rainbow trout populations from excessive sedimentation originating in Ninemile Creek and some of its tributaries. The estimated project budget is:

Critical Area Planting	$ 10,700
Streambank Protection	$ 12,500
Grade Stabilization	$ 15,000
Diversions	$ 12,000
Sprinkler Irrigation	$ 74,556
Stockwater Development	$ 15,500
Fencing	$ 14,280
Irrigation Ditches	$ 4,000
Pasture Rest	$ 1,200
Total	$159,736

ALTERNATIVE DIVERSIONS

The diversion of water from streams and rivers in Montana to satisfy some beneficial uses such as irrigation, industrial uses, is often associated with impairments to other beneficial uses such as fisheries and recreational uses of the water. An effort to find new types of diversion structures that efficiently and economically divert water from streams with less negative impacts to water quality would improve water quality throughout the state. The DHES has contracted with an engineering firm to do a literature search

and investigation of alternative diversions, and develop and print 10,000 copies of a brochure describing the most practical diversions (phase 1). One of the most promising alternative diversions would then be selected, designed and installed in a stream.

The project budget is:		
	Phase 1	$ 12,000
	Phase 2	$ 18,000
	Total	$ 30,000

GODFREY CREEK. Godfrey Creek is situated in Gallatin County. The Assessment Report rates the creek as severely impaired from bacteria, sediment and nutrients originating from agricultural activities. There are a number of dairies, feedlots, and other livestock concentration type situations adjacent to or in near proximity to the creek. The Gallatin County Conservation District has agreed to sponsor Godfrey Creek as a Demonstration Project and has met with landowners in the watershed and cooperating agencies on several occasions. The District also participated in a 1989 physical features inventory conducted to determine conditions that exist in and near Godfrey Creek.

Godfrey Creek also has been selected for hydrologic unit funding under the USDA Water Quality Initiative. Under this approach the Soil Conservation Service and the Extension Service receive additional federal funds to provide technical, educational and informational support for the project. The USDA Agricultural Stabilization and Conservation Service (ASCS) received only a portion of its original funding request for financial assistance to help landowners implement practices. If the ASCS can obtain an additional $100,000, the WQB has pledged an additional $100,000 in state funding to bring the total nearer to that which is necessary to complete the entire project.

If adequate funding can be obtained, the entire Godfrey Creek watershed will treated. The estimated budget and best management practices for the entire Godfrey Creek are as follows:

Manure and waste storage ponds	$474,000
Pipeline	$ 40,000
Stockwater pipeline and tanks	$ 30,000
Diversion	$ 22,000
Collection berms	$ 52,500
Fences	$ 5,000
Shrubs	$ 20,000
Grass waterways	$ 4,400
Wells	$ 2,000
Powerline	$ 7,500
Wasteway	$108,000
Ditches	$ 1,500
Total	$767,000

Thus far $252,955 has been appropriated for the project ($42,900-hydrologic Unit funding, ASCS and $210,055-319 EPA Grant funds.) Private owners will contribute and additional $84,300 bringing total project funding to $337,255. This amount will implement the following practices on five farms:

Fences	$ 1,239
Buffers	$ 200
Shrubs	$ 5,446
Berms	$ 3,000
Diversions	$ 7,833
Stockwater Pipelines & Tanks	$ 13,915
Irrigation Pipeline	$ 11,850
Grass Waterways	$ 300
Manure and Waste Storage Ponds	$293,442
Total	$337,255

Since the initial Nonpoint Source Plan in 1988, Three Mile Creek and Ninemile Creek watershed demonstration projects have been added and 3-6 new watersheds will be added in 1991. The milestones for deliverables and the mechanics for developing these projects will be similar to those for Otter Creek. Adjustments will be made in the work plans as necessary to meet EPA requirements. Milestones for projects will be reflected in the individual work plans.

ADDITIONAL STREAMS AND WATERSHEDS. Other streams listed on the Assessment Report as moderately and severely impaired by nonpoint sources will be considered as candidates for implementation of demonstration BMPs. Priorities will be

established in a manner similar to other projects previously described and milestones set accordingly. Accomplishments in this particular area will be closely related to the amount of funding made available. Once a stream or watershed has been selected BMPs will be applied to the extent possible.

2.3.2 Silviculture

Introduction

Forestry activities have impaired the beneficial uses of a relatively small percentage of Montana's streams and lakes. However, forest management activities often occur in the headwaters of our highest quality waters and as such are the subject of growing public concern. Montana's silvicultural NPS program has four primary components: 1) the development of a network of agencies to work on silvicultural NPS problems; 2) the adoption, implementation and effectiveness monitoring and upgrading of BMPs; 3) a BMP information and education program for private landowners and managers; and 4) the completion of water quality improvement demonstration projects on streams impaired by silvicultural practices.

Agency Network

The WQB/DHES is responsible for administering Montana's water quality laws and delegated federal water pollution programs. The oversight of NPS activities by WQB/DHES on all forest land ownerships is limited primarily by a lack of manpower. Less than one full-time position is assigned water quality responsibility for forest practices/logging. Because of this restriction, it especially important to utilize existing agencies and working relationships to make sure that land management activities are meeting water quality objectives.

Three agencies provide a direct link with private and public forest lands and have signed Memorandums of Understanding (MOU) with the WQB/DHES to act as designated agencies to implement NPS programs on lands within their jurisdiction; these are the USFS and BLM on their lands and the Conservation Districts on nonfederal

lands. The WQB retains oversight authority of the activities of these agencies and of all water quality-related activities on forested lands. The designated agencies and their linkages are described in this document in the program development section of the general management program (2.2.1).

Section 319 of the Clean Water Act charges the DHES with review of the activities and programs of all federal agencies to make certain they are consistent with this NPS Management Plan. This oversight helps make certain that federal agencies are responsive to our needs.

The 1989 Montana Legislature added significant NPS silvicultural responsibility to a fourth agency, the Department of State Lands (DSL) when it passed HB 678. This bill requires an owner or operator to provide notification to the DSL prior to conducting forest practices. The DSL will provide the applicant with a copy of Montana's Silvicultural BMPs and may require onsite consultation if the project has potential water quality impacts. Onsite consultation may also include the DHES and the Conservation Districts to provide information to owners and operators. No additional regulatory authority to require specific BMPs is conferred by this legislation. This act became effective January 1, 1990.

Best Management Practices. The WQB/DHES has adopted one set of BMPS for Silviculture that is recognized by the three NPS designated management agencies in Montana and the DSL. This package unifies and establishes a minimum level of silvicultural BMPs for Montana.

The BMPs focus on preventing sediment, the primary silvicultural pollutant, from reaching streams and lakes. Timely implementation of BMPs is critical to the control of silvicultural NPS pollution because most of the sediment is produced in a relatively short time after road construction and harvesting. A list of these BMPs is included in the Appendix. Detailed descriptions of these practices are included in Montana's Best Management Practices Manual and can be reviewed at the WQB in

Helena.

Adoption of this BMP package is the culmination of more than two years of work begun by the Cumulative Watersheds Effects Cooperative (CWEC) and completed by the Environmental Quality Council (EQC) interim legislative study of forest practices.

The CWEC under the direction of the Montana Department of State Lands, Division of Forestry, is comprised of the major landowners in forest management (in the lower Clark Fork, Kootenai and Flathead river basins:) U.S. Forest Service, (Region 1, Lolo, Flathead and Kootenai National Forests), Bureau of Land Management (BLM) (Garnet District), Bureau of Indian Affairs (BIA) (Flathead Indian Reservation), Champion International, and Plum Creek Timber. DHES/ WQB and DNRC/CDB are non-landowner members to the cooperative. The Montana Logging Association, and Montana Department of Fish, Wildlife and Parks are associate members. In 1987 a Memorandum of Understanding (MOU) was signed, adopting BMPs for forestry on those lands represented by the Cooperative (See Appendix). In November 1987, the Montana Association of Conservation Districts (MACD) also adopted these BMPs.

The 1987 Montana Legislature passed House Joint Resolution 49 (HJR 49) which directed the Environmental Quality Council (EQC) to conduct an interim two-year study on the relationship between forest management and watershed impacts in Montana. Specifically, the resolution assigns the EQC to study:

"1. How current forest management practices are affecting watersheds in Montana;

2. The range of management practices that have proven effective in conserving watersheds while maintaining the economic viability of timber harvest operations;

3. The existing administrative framework, including regulatory and voluntary efforts, promoting use of best management practices; and

4. If areas for potential improvement are indicated, the EQC has been requested to recommend actions most conducive to achieving watershed and timber goals."

The resolution further directs the EQC to work closely with persons and organizations having technical and educational expertise in timber harvest techniques and effects. The study report and recommendations were submitted to the 1989 Legislature.

The EQC established two study committees: the Watershed Effects Working Group (WEWG) and the Best Management Practices Technical Committee (BMPTC). Each comprised representatives of state and federal agencies, special interest groups, industry, and private landowners involved in forest management or concerned about potential watershed impacts.

The WEWG was directed to identify how forest management practices are affecting watersheds. The group divided this assignment into two parts:

1. Identify the overall scale of the problem relative to total annual harvests on each land ownership; and
2. Describe the specific characteristics of the problems; can they be related to particular practices, landforms, or site conditions?

The WEWG developed a survey questionnaire to identify problem and model sites. Specialist teams conducted field inspections during the summer of 1988 to evaluate the effectiveness of current BMP application and the prevalence of watershed impacts. Results of the WEWG questionnaire and field investigations will be incorporated into the State's Water Quality Assessment Report.

The BMPTC had two primary tasks:

1. To review the administrative, regulatory, and voluntary framework for statewide BMP implementation; and
2. To examine the range and effectiveness of management practices that protect watersheds while maintaining the economic viability to timber harvest operations.

To develop a consensus package of BMPs, the BMPTC reviewed the CWEC's BMP package, the USFS's Soil and Water Conservation Practices, BMPs from other states, and recommendations from various agency, industry, and special interest groups. These BMPs were presented to the EQC and accepted. The BMPTC met July 14, 1989,

reviewed editorial changes and finalized the BMP package for use by the DHES/WQB in the NPS Management Plan and for use by DSL. The BMPTC requested that the adopted BMPs be used for at least one year before considering further changes.

The intent to adopt the EQC silvicultural BMPs for forestry was subject to extensive public comment in our draft NPS Management Plan in June, 1988, and in public meetings held in July, 1988. No negative comments were received.

Implementation of these BMPs is not mandatory under this program. However, this program utilizes existing laws, notably the Natural Streambed and Land Preservation Act (SB 310) and the Montana Water Quality Act, to insure compliance. Anyone planning an activity that impacts the beds or banks of a perennial stream must first seek and obtain a permit from the Conservation District. Personnel from the Conservation District, Department of Fish, Wildlife and Parks, and/or the WQB work with the applicant to make certain BMPS are implemented. Failure to comply is punishable by fine.

WQB/DHES personnel investigate complaints of water quality violations. Any activity which causes pollution of state waters, or places wastes in a location where they are likely to cause pollution of state waters is prohibited by the Montana Water Quality Act and is punishable by fine not to exceed $10,000 per day of violation for civil penalties or $25,000 per day of violation for criminal penalties. SB 310 and the Montana Water Quality Act are described in more detail in section 3.3 of this document.

In order to encourage innovation, Montana allows the designated management agencies to select and implement more stringent BMPs. For example, the USFS has developed Soil and Water Conservation Practices which meet or exceed requirements of Montana's Silvicultural BMP package.

The 1989 Montana Legislature directed the Montana Department of State Lands (DSL) Forestry Division to check forest practices for BMP implementation, and report to the EQC before the 1991 legislative session. Multidisciplinary audit teams conducted

audits on 44 different sales. Results of the 1990 audits are generally not as good as previous audits. Overall percentage ratings were similar. However, the 1990 audits found a higher percentage of sites with major departures and impacts than previous audits. In 1988 the audits averaged 3.3 major impacts per site; in 1990, the average was 8.6 per site. These results may be influenced by a higher percentage of high hazard sites and amounts of road construction than in earlier audits.

Recommendations from the audit teams to EQC include: continue the interdisciplinary BMP audits, on an annual or biannual basis; adjust BMPs where the audits point out weaknesses; continue to train loggers, landowners, and foresters, concentrate on problem areas documented through BMP audits, and rectify apparent inconsistencies between BMP goals and hazard reduction agreements.

Watersheds of Special Concern. Public water supply watersheds receive special attention. The WQB/DHES has review and approval authority for all plans and specifications for roads associated with logging and mining in municipal watersheds. This review allows the DHES an opportunity to make certain forestry BMPs are implemented.

Watershed Modeling. Models have been used to predict water quality impacts related to sediment and changes in water yield and to adjust harvest management practices. The assumptions and limitations of the individual model must be considered when models are used to predict water quality impacts. Modeling results are limited by the data base, site and applicability of the model to the activity. The CWEC has adopted the WATSED model to evaluate the effects of cumulative harvest on water yields in multiple ownership watersheds. Field verification monitoring is a necessary part of the evaluation procedure.

Habitat Improvement. Fish habitat improvement projects may be used to improve impacted conditions, however, the installation of fish habitat improvement structures alone will not necessarily be considered adequate mitigation for incorrect application of BMPs.

Monitoring. A subcommittee of the NPS Task Force met Feb 28, 1989 to discuss improving Montana's monitoring strategy. Most forest practices monitoring concentrates on whether BMPs have been applied. The WQB/DHES participates in an interagency audit team that is auditing timber sales to see if proper BMPs are implemented and if they are adequate to meet water quality objectives.

Biological monitoring has been limited in terms of linking the impact of land management activities to effects on specific biological communities. The WQB/DHES has conducted macroinvertebrate studies, and has supported fisheries evaluations and physical features inventories. A Stream Reach Assessment method has been developed for evaluating instream conditions that determine if BMPs are adequate to protect beneficial water uses.

If currently recognized BMPs are found to not support water quality objectives, they will be replaced with adequate practices. Timber sale audits, and monitoring and oversight by the WQB, and improved technology should all lead toward the evolution and adoption of new and better BMPs.

Education. The WQB is cooperating with the DSL, the state extension forester, and the Montana Logging Association in developing a forestry education program. This program involves five components: 1) BMP brochure, 2) BMP booklet, 3) Portable storyboard, 4) BMP video and 5) BMP workshops.

The BMP brochure will introduce the voluntary BMP program and HB 678 to loggers and landowners. The BMP booklet will clarify BMPs to make it easier for loggers and landowners to implement them on the ground. The storyboards will be used for conducting field education with small groups. The main video will feature live action of BMP implementation. Additional tapes will feature BMPs for streamside management zones, BMPs for harvesting and BMPs for roads. Workshops held in April 1990 and attended by 800 loggers and landowners provided information and explanations of the BMPs and the voluntary program approach adopted in Montana.

Watershed Demonstration Projects. Initially, projects are proposed to demonstrate the level of BMP implementation and

effectiveness over a broad range of sites and develop the process to ensure that BMPs are protecting beneficial uses. These projects involve: 1) continuation of the BMP audits, 2) determination of the level of beneficial use protection provided by forestry BMPs, 3) development of a process to modify BMPs as necessary to protect beneficial uses, and 4) a more definitive description of proper delineation of streamside management zones. The implementation of these projects will be largely dependent on the amount of 319 funding appropriated, and in cooperation with other agencies -- especially the DSL and the Extension Service.

Site specific silvicultural NPS management projects have not been fully developed at this time. Members of the NPS Task Force, the WEWG, and the audit teams will be consulted for final selection of candidate demonstration projects. Streams should meet the following criteria to be selected as a silvicultural demonstration project:

1. Silviculture represents the primary source category;
2. The stream impairment is representative of other impacted silvicultural sites, i.e. sedimentation and habitat alteration;
3. Site improvement, resulting from the demonstration project, can be evaluated;
4. Moderate or severe impairment has occurred; and
5. Improvements are achievable in terms of solutions, funding and landowner cooperation.

The following streams were selected from the Assessment Report and are potential candidates:

<u>Kootenai River Drainage</u>

Wolf Creek

<u>Upper Clark Fork Drainage</u>

Braziel Creek

Keno Creek

Miller Creek

O'Brien Creek

Sleeping Child Creek

W. Ashby Creek

Lower Clark Fork River Drainage

Fish Creek

Fishtrap Creek

W. Fork Thompson River

Randolph Creek

TARGET DATES	SILVICULTURE MILESTONES
04/87	BMPs adopted for western Montana by CWEC.
05/88	Design BMP education program for private landowners and landusers and apply for RRD funding.
07/88	Coordinate water quality improvement efforts with Flathead Basin forest practices committee.
10/88-12/88	Evaluate EQC's findings of BMP effectiveness.
10/88-12/88	Incorporate EQC's assessment of silviculturally impaired streams into water quality assessment report.
11/88	Comprehensive BMP package developed by EQC BMPTC study incorporated into NPS management program.
11/88-01/89	Evaluate EQC report of forest practices impacts on water quality.
11/88-12/88	Establish forest practices review committee for education, monitoring and feedback (subset of WEWG and BMPTC groups.)
04/89	Forestry BMPs and riparian management display to promote water quality protection completed; the display is scheduled for use at Cowboys' and Loggers' Days in Missoula - DNRC.
06/89-12/92	Implement and monitor silvicultural demonstration projects and BMP implementation.
07/89-07-91	Implement components of BMP education program.

2.3.3 Resource Extraction/Mining

Introduction

The intent of this section of the management program is

twofold: 1) to identify priority methods and means for control of nonpoint source pollution from abandoned and inactive mines and 2) to provide a framework for the development of a program that addresses other resource extraction problems including their impact on water quality, the methods for control of NPS pollution from such sources, and a component that attempts to insure the compliance of small miners with water quality regulations.

Impacts of Abandoned/Inactive Mines to Water Quality. The Montana Nonpoint Source Assessment Report identifies over 1,380 miles of Montana streams as being affected by resource extraction. The vast majority of these impairments are caused by abandoned/inactive hardrock mines. Heavy metals can be chronically or acutely toxic to aquatic life. The principal metals adversely affecting water quality in Montana are lead, zinc, copper, cadmium, silver and mercury. The potential bioaccumulation of these toxic substances in aquatic organisms is also a concern; however, monitoring to date has shown this to be a problem only with mercury accumulation in fish in Silver Creek near Helena. Mercury has been detected in fish from other waters but below FDA action levels. These metals may enter streams either as a result of man-induced activities or through natural processes of mineralization or a combination of the two. Pyrite, which is commonly associated with valuable mineral deposits, oxidizes when exposed to water and air, depressing instream pH levels which can create toxic conditions for aquatic life.

Montana has adopted EPA Gold Book values as state quality standards for metals. Ambient data have been compared with Gold Book values to determine whether beneficial uses are impaired. Where water quality data do not exist, the assessment must be subjective and based on the judgment of water quality management professionals.

The process for identifying abandoned/inactive mining problem areas, and the severity of those problems involved an extensive review of water quality data and criteria, special studies and evaluation utilizing best professional judgment. The stream

reaches identified in this process are listed in the state's Nonpoint Source Assessment Report. Additional intensive investigation may be necessary to further identify the nature of impairment on certain waterbodies and at specific sites before management practices can be designed and applied.

Priority Demonstration Projects and Activities. The primary objective of this component is to minimize impairments to beneficial uses such as aquatic life, recreation, water supply, and irrigation caused by mining, to protect threatened waters and to achieve water quality improvement in degraded waters. Many new and unproven management practices will require demonstration to determine applicability, performance, and economic feasibility in the treatment of acid mine drainage. This demonstration process is designed to refine the elements of best management practices for wide applicability to watersheds impacted by inactive/abandoned mining.

The Water Quality Bureau of the Department of Health and Environmental Sciences (WQB/DHES) and the Abandoned Mine Reclamation Bureau of the Department of State Lands (AMRB/DSL) are cooperating to select and prioritize potential demonstration projects. The DSL contracted with Northern Engineering and Testing in 1987 to develop an inventory database of all the abandoned hardrock mine sites in the state. This listing of sites is prioritized in part based on water quality impairments. The WQB/DHES coordinated our NPS Assessment Report list with this and other project lists from DSL to prioritize mining demonstration projects for Montana. Priority watersheds and projects for fiscal year 1990 are listed in Table 4.

Table 4. Resource Extraction Projects FY 1990

Project/Waterbody/Watershed	Source of Funding	Responsible Agency
Blackfoot River Abandoned Mines	RDGP	DSL,DNRC, WQB,CD
Elkhorn Creek Water Quality Improvement	RDGP	DSL, DNRC
Wood Chute Creek Water Quality Improvement	RDGP, AMR	DSL, DNRC
Nellie Grant Mine Reclamation	RDGP	DSL, DNRC
Middle Fork Warm Springs Creek Reclamation	RDGP, AMR	DSL, DNRC
Ophir Mine Reclamation Project	RDGP, ARCO, local	Butte-Silver-Bow County
Mouat Mine/Stillwater River	AMR	DSL
Number Five Coulee	AMR	DSL
Cottonwood Creek	AMR	DSL

RDGP - Reclamation Development Grant Program
AMR - Abandoned Mine Reclamation Program
DSL - Department of State Lands
DNRC - Department of Natural Resources & Conservation
WQB - Water Quality Bureau
CD - Conservation District

Best Management Practices for Abandoned/Inactive Mining. The primary function of best management practices (BMPs) for nonpoint pollution from mining is to maintain or restore beneficial uses. As in the case of other nonpoint source categories of pollution, few if any of the BMPs by themselves will solve nonpoint problems. Several BMPs will usually have to be implemented as part of a system to adequately address water quality throughout a watershed. In order to have an effective program, action must be extended well beyond listing and implementing BMPs. The overall strategy should

include development of appropriate water quality standards, enforcement of existing laws, cooperation among all local, state and federal agencies charged with water quality authority, and the implementation of a strong monitoring program.

Montana provisionally adopted the BMPs for abandoned/inactive mine waste and mine drainage developed by the State of Colorado's Mine Land Reclamation Division and approved by EPA for use in Colorado. These BMPs represent the best knowledge of agencies and individuals in Colorado as of January 1989. There are two major benefits to using these BMPs as a starting point for Montana: 1) it provides a base upon which Montana may build expanded and more comprehensive BMPs for all resource extraction subcategories and 2), it allowed Montana to submit an initial resource extraction (mining) category management program to EPA for approval by the January 4, 1990 deadline. Subsequent EPA approval would allow us more leverage to interact with other agencies dealing with cleanup of abandoned mines, to possibly accelerate cleanup of identified problems, and to expand our efforts into other resource extraction sources such as placer mining, oil and gas extraction, coal mining, and other hardrock mining.

The provisional BMPs will be revised to meet Montana's needs following public comment and hearings in 1991 and will be demonstrated at selected reclamation projects during the next two years. The practices may also be subjected to review by a mining subcommittee of the NPS Task Force. Continuing improvements in BMPs and new innovative BMPs will dictate the need for annual review and updating of these practices by the NPS Task Force.

The BMPs are general and are intended to address commonly encountered abandoned mine nonpoint source problems. These BMPs are not meant to serve as a basis for regulatory programs but rather to be implemented on a voluntary basis to address known impairments to water quality in Montana. State and federal statutory authorities and regulations are presently in place to address mining operations and the application of specific BMPs for mining, processing and reclamation. Those BMPs adopted herein are

intended to be used on a voluntary basis on inactive/abandoned mines where a responsible party cannot be identified.

The general format used to present each of the BMPs is identical to the format used by Colorado in its management program as follows:

Heading	Context
PRACTICE	Includes a brief title of the management practice. The numbering of the activities does not have any intended significance.
PURPOSE	Describes the desired results of the practice as it relates to environmental protection.
PLANNING AND DESIGN	Further defines the practice and expresses how the practice is applied. Describes criteria, designs parameters or standards to be considered prior to implementation.
CONSTRUCTION CONSIDERATION	Describes how the practice is applied, who is responsible for its application and specifically what is involved in constructing the management practice.
MAINTENANCE AND MONITORING	Discusses the types of maintenance and monitoring issues which must be addressed in conjunction with a particular practice.
EFFECTIVENESS	Describes the probable likelihood of success at achieving water quality protection, restoration of beneficial uses or improvements in uses.

REFERENCES — Identifies the source of detailed information about the management practice or other references where the practice is further documented.

The management practices are grouped in three categories. The first addresses preventative measures and hydrologic controls which are aimed at preventing the contamination of water in mining areas. Preventative measures to control drainage and seepage from mine waste include: diversions to redirect run-on water away from mine water recharge areas or waste piles, infiltration barriers to prevent water from entering mine workings or waste piles, runoff controls such as terracing and contouring of mine waste, and removal operations for railing and waste piles near water courses and atop alluvial floodplains. Bulk head seals and other types of mine seals are additional measures which may reduce or eliminate mine drainage impacts and provide surge control and flow equalization in conjunction with treatment.

The second major category of management practices may be described as passive mine drainage and mine waste treatment techniques. The term passive mine drainage treatment (PMDT) refers to mine drainage impact abatement activities which accomplish the goals of metal removal, removal of dissolved solids and neutralization of mineral acidity using low cost material and construction techniques which do not require frequent maintenance operations. PMDT systems must be designed on a site-by-site basis and adapted to local environmental conditions. Site-specific treatments are required to compensate for unique problems related to access, elevation, surface hydrology, specific pollutants, type of mining and legal restrictions such as water rights and land use controls. A major goal of PMDT approaches is to minimize the need for operation and maintenance.

The third category of management practices is active treatment systems for mine waste and mine drainage. These include physical chemical treatment plants, activated biological treatment systems, electrostatic and electrochemical systems, osmotic membrane systems

and combinations of such systems. While there are hybrid systems which are inexpensive to build and uncomplicated to operate, additive treatment systems informally involve closed conduits and pumps, automated metering systems for chemical additives and strict operational and maintenance requirements. Accordingly, active systems require near constant operation and maintenance activities. It is unlikely that such systems will be employed under the nonpoint source program except in special circumstances.

The BMPs listed on the following pages are described in detail in the Appendix.

Measures Using Hydrologic Controls to Prevent NPS Contamination

Definition:

These measures prevent pollution of waters through controls which eliminate or minimize contact of water with mining areas.

Purpose:

1. intercept and reroute uncontaminated water away from contaminated areas;
2. prevent uncontaminated water from mingling with mine waste or mineralized areas;
3. reduce the erosion of mine waste;
4 remove or relocate mining waste to prevent contamination of water;
5. stabilize stream channels and direct flows away from contaminated materials;
6. prevent a release of mine water and restore hydrogeologic conditions;
7. prevent acidification of waters exposed to mine waste;
8. stabilize mining waste areas to prevent release of materials to streams;

Condition Where Practice Applies:

In all abandoned or inactive mining areas where contamination of water may be prevented through hydrologic control.

Specification Guides:

Run-on controls
Bulkhead seals
Infiltration barriers
Air seals/mine atmosphere control
Run-off controls/erosion controls
Protection of unstable areas
Mine waste removal
Drainage stabilization

References:

Management Practices for nonpoint Source Pollution Related to Mine Waste and Mine Drainage - Colorado Mine Land Reclamation Division

Passive Mine Drainage Treatment Techniques

Definition:

Mine drainage impact abatement activities which accomplish the goals of metal removal, removal of dissolved solids, and neutralization of mineral acidity using low cost material and construction techniques which do not require frequent maintenance operations.

Purpose:

1. to reduce the concentration of carbonic acid, and increase pH in waters;
2. remove mineral acidity by increasing alkalinity in waters;
3. allow chemically created compounds to settle out of waters; and
4) attenuate acidity and remove metals through plant uptake, filtration, absorption, and aerobic and anaerobic precipitation.

Condition Where Practice Applies:

In areas of abandoned or inactive mining where adequate soils and site conditions allow construction of such systems.

Specification Guides:

Aeration
pH modulation/neutralization
Biological treatment
Wetlands

References:

Management Practices for Nonpoint Source Pollution Related to Mine Waste and Mine Drainage-Colorado Mined Land Reclamation Division.

Active Treatment of Mine Drainage

Definition:

Active treatment systems include physical, chemical, activated biological, electrochemical, osmotic membrane and combinations of these types of systems. Active treatment systems normally involve closed conduits and pumps, automated metering systems for chemical additives, and strict operational and maintenance requirements.

Purpose:

1. To provide instantaneous neutralization, heavy metal precipitate concentration, and filtration of mine drainage;
2. To absorb heavy metals from solution through algal species;
3. To provide chemical co-precipitation for removal of heavy metals and neutralization of waters;

Specification Guides:

Continuous concentrators

Algal ponds
Co-precipitation/filtration process
High density sludge process

References:

Management Practices for Nonpoint Source Pollution Related to Mine Waste and Mine Drainage-Colorado Mined Land Reclamation Division.

Resource Extraction/Mining Program Milestones

The program milestones include:

1. The Water Quality Bureau/DHES will continue to coordinate with the Abandoned Mine Reclamation Bureau/DSL the selection and prioritization of AML and NPS demonstration/reclamation projects and activities for abandoned/inactive hardrock mines.
2. The Water Quality Bureau will review, in cooperation with the NPS Mining Subcommittee, DSL, EPA, the Montana Mining Association and other interested entities, the provisionally adopted BMPs and subsequently selected BMPs for additional resource extraction subcategories. Hearings will be held during 1990 to receive comment on the provisionally adopted and/or subsequently selected BMPs and public comment will be solicited. Final revisions will be available for review by the public by December 15, 1990.
3. Final BMPs for all resource extraction subcategories will be submitted to EPA by March 31, 1991.
4. Review and update information for the Montana Nonpoint Assessment Report by October 1990.
5. At least one BMP demonstration project will be initiated during 1990. DSL will be the lead agency.
6. Initiate additional demonstration projects on abandoned/inactive hardrock mines in 1991 and 1992. DSL will be the lead agency.

7. Implement projects to demonstrate a variety of BMPs designed to improve water quality for all resource extraction subcategories during 1993, 1994 and 1995. DHES and DSL will be lead agencies.
8. The WQB will, in cooperation with DSL, review and assess the adequacy of state mining review procedures to protect water quality, review requirements for bonding and reclamation, and examine the reclamation costs to restore/reclaim pre-mining habitat conditions. DHES will propose changes deemed necessary to achieve water quality protection, effective bonding and sufficient reclamation by March 31, 1991.
9. The WQB will incorporate into its NPS education program by December 31, 1990 provisions to inform and educate miners regarding the use of selected BMPs. DSL's permitting program will be used as one vehicle for distribution of educational materials.
10. The WQB will, in cooperation with DSL, evaluate the permitting, review and regulatory policies associated with cyanide heap leach operations by July 1, 1991 to address concerns regarding chemical use and disposal, and introduction of chemicals into the environment.

MINING DEMONSTRATION PROJECTS

Upper Blackfoot Mine Reclamation Project. Mikehorse Creek, a tributary to the upper Blackfoot River in Lewis and Clark County, is heavily impacted from acid mine drainage from the abandoned Mike Horse Mine. Mike Horse Creek is severely impaired and also impairs the water quality in the Blackfoot River which is troubled with declining trout populations and sizes, and lowered reproduction. The Mike Horse Mine is actually comprised of six separate sites.

Major BMPs to be implemented in this project are moving and placing mine spoils, closing adits, installing acid mine drainage treatment systems, limestone trenches, fences, and revegetating disturbed areas.

An additional feature of this project is to alleviate the potential hazards of acid mine drainage through treatment of the acid mine drainage via microbial activity in constructed wetlands.

The estimated cost of implementing this project is $422,000. $407,000 has been obtained from the Resource Indemnity Trust fund by the Lewis and Clark Conservation District. The Water Quality Bureau has allocated $15,000 of 319 funds to help complete the project, which should be contracted and implemented in 1991.

Elkhorn Mine Reclamation Project. Elkhorn Creek in the Wise River Drainage is listed in the Assessment Report as moderately impaired from mining. Acid mine drainage from the adit of the Elkhorn mine runs across a portion of the mine waste rock accumulating additional sediment and heavy metals and then directly into Elkhorn Creek. In addition, there is potential for further degradation of water quality in Elkhorn Creek if a ditch that diverts water around the mill tailings area fails in the future.

Best Mangement Practices for the site include two wetland ponds for the treatment of mine effluents. Mine effluent would be piped from within the mine adit to the ponds, which would be fenced to prevent wildlife and humans from entering the pond area. The waste rock would be reshaped to prevent infiltration of surface water, and ditches would be constructed to divert overland flows away from the waste. Vegetation would be established on disturbed areas and some channel reconstruction and stabilization would be required prior to water being returned to the natural channel. The estimated cost of implementing these practices is $300,000 which has been appropriated from state Resource Indemnity Trust Funds for this project.

2.3.4 Hydromodification. This nonpoint source category includes streambank/stream channel alterations and construction activities, flow regulation/modification, and construction and operation of dams. As described in Chapter 3, Montana has several programs (e.g., Natural Streambed and Land Preservation Act, Stream Protection Act, Water Quality Act) that address nonpoint pollution

from hydromodification activities, and provide a mechanism for managing nonpoint source pollution.

Staff at the DHES and DFWP will evaluate the effectiveness of these programs to control nonpoint source pollution from hydromodification. Montana's statewide Nonpoint Source Pollution Task Force will also review programs, and an additional staff member proposed for DHES in the administrative portion of the General Management Program will provide a written annual evaluation of hydromodification pollution control programs. Recommendations for improvements to existing programs will be included in the annual evaluation. The Nonpoint Source Task Force will review the evaluations and formalize recommendations for DHES consideration.

BMPs for hydromodification often relate directly to other categories of nonpoint source pollution. For example, timber harvesting practices may impact stream hydrology by changing seasonal flow patterns and water yield. Agricultural activities may involve streambank/channel alterations. BMPs adopted under the Management Programs for these other categories will also control pollution from hydromodification activities.

2.3.5 Land Disposal. This nonpoint source category includes pollution related to solid waste and sludge disposal, on-site wastewater treatment, and runoff/leachate from land treatment or hazardous waste disposal sites. As described in Chapter 3, Montana has existing programs that provide mechanisms to address nonpoint source pollution from land disposal (e.g., Water Quality Act, Sanitation in Subdivisions Act, Hazardous Waste Act, Solid Waste Disposal Act).

Staff at the DHES will evaluate these programs to control nonpoint source pollution from land disposal. The additional staff member proposed for the DHES in the administrative portion of the General Management Program will coordinate this review and provide an annual evaluation of land disposal pollution control programs. Recommendations for improvements to existing programs, if necessary, will be included in these annual evaluations. The

Statewide Nonpoint Source Task Force will review the evaluations and formalize recommendations.

2.3.6 Groundwater Program. Montana has received approval of a ground water program from EPA as part of the NPS management program. It consists of two major components: 1) ground water assessment, classification and prioritization, and 2) NPS ground water education program. Montana's initial program proposal is included in the appendix.

The emphasis of the Ground Water Program (GW) focuses on the statewide ground water assessment, classification and prioritization project. A portion of GW funds will be utilized to assist a small scale project designed to develop a county ground water "risk" map. The Lewis and Clark Conservation District (LCCCD) proposes to compile depth to ground water and soil data and to identify high risk or areas in the county that are vulnerable to contamination.

Statewide Ground Water Assessment, Classification and Prioritation. Detailed information on the water-bearing characteristics and the quality of ground water in the different aquifers across the state is scattered. Montana lacks any coordinated effort to map and classify aquifers. This ground water information is necessary to establish a basis for identifying priorities for ground water pollution control and prevention needs.

The primary effort of the WQB GW program focuses on a preliminary assessment and characterization of Montana's ground water resources. Existing data and information on Montana's ground water resources and use contained in the MBMG files will be illustrated on a series of maps. A statewide map of aquifers will have to be developed from geologic data. The maps will provide a gross, statewide view of Montana's ground water information. The maps can be used in a variety of applications, such as planning and management, public education, training and development of other maps or brochures.

MBMG operates the Montana Ground Water Information Center

which stores and maintains the majority of ground water data for Montana. The maps will consolidate existing data on ground water quality, occurrence and use, assist in the identification of significant data gaps and provide general prioritization of ground water areas. New statewide maps of aquifer outcrop areas will be prepared. The map scale will be 1:500,000 and all maps will be produced on a Geographic Information System (GIS) compatible format to facilitate manipulation and update.

The maps will be researched and developed by the MBMG under a contract with DHES. The proposed ground water mapping project will be conducted during state fiscal year 1991 (SFY91 and SFY92). As a result the project will straddle the 1990-1991 and 1992-1993 biennium budget funding periods which change on July 1, 1991. Two separate contracts, one for each biennium, will be required to fund this project. The project has therefore been divided into two portions where some maps will be prepared by June 30, 1991 and the remaining completed by March 1, 1992. GW funding for the project totals $58,517 (SFY91 - $45,937 and SFY92 - $12,580).

The MBMG's recent efforts to develop and maintain its GIS capabilities have elevated in the statewide GIS mapping project to a priority level. MBMG will therefore contribute funding to the statewide project in the form of $38,597 for personnel services.

GW map data will be compiled on a Geographic Information System (GIS) to facilitate use and future updates. State agencies, local governments and the public can refer to the maps to help identify priority areas for future work. Eventually, through the State Library's Natural Resources Information System (NRIS), agencies and the public could manipulate the map data on the NRIS GIS system and generate other maps that may better serve their specific purposes.

The GW maps will provide the basis for conducting ground water prioritization of vulnerable aquifer areas, which is necessary to focus limited state resources on the areas which need attention. The method for quantifying priority areas has not been established because the prioritization methodology will be dependent upon the

mapping results. An area will be considered a priority if the underlying ground water is shallow or vulnerable, the ground water is widely used as a source for drinking water and the area contains potential sources of pollution.

In the future, prioritization information can be combined with data on the location and size of public water supplies to determine where wellhead programs would be most beneficial. Aquifer prioritization and ground water classification information can be combined with pesticide use data and to determine where pesticide management plans should be implemented.

Lewis and Clark County Conservation District

GW funds will be utilized to partially support a small scale project designed to develop a county ground water "risk" map. The Lewis and Clark County Conservation District (LCCCD) proposes to compile depth to ground water and soil data and to identify high risk or areas in the county that are vulnerable to contamination.

Leach models such as GLEAMS will be utilized to model the movement of selected pesticides to provide information on actual pesticide migration and help verify the sensitivity of high risk areas. Staff from the LCCCD will work with agricultural producers to develop appropriate crop management strategies for high risk areas.

The total cost of this projected is project to be $14,550, and the GW program will contribute $4,350. Additional funding for this project will be provided by the Montana Department of Natural Resources and Conservation, Conservation District Grant Program, Soil Conservation Service, County Extension Service, and Dow Chemical.

BUDGET

Activity	Cost
GW Assessment, Classification and Prioritization	
Part One SFY91	$45,937
Part Two SFY92	12,580
Lewis & Clark Co. Conservation District GW Risk Mapping	4,350

Education (map production and distribution)	6,033
Total	$68,900

Public Education

The final portion of the GW program will be related to public education. A public education project would be directed towards publication and distribution of the statewide ground water assessment, classification and prioritization maps. The public education project is obviously dependent upon the results of the statewide mapping effort and details cannot be developed at this time. Approximately $6,033 of remaining funds are available for a public education project.

Possible options include using the GW funds in conjunction with the MBMG to print and distribute a series of statewide maps. Another option that has been discussed is to use the funds to enter the mapping data into the NRIS GIS system for use by other agencies and the public. Depending upon the results of the mapping effort, possibly the map information could be manipulated and condensed to produce educational materials for the general public such as bulletins or pamphlets. It may also be necessary to provide additional funding to the MBMG to collect additional data to fill data gaps identified by the mapping effort. EPA will be contacted for approval of eventual use of these funds.

SUMMARY OF 1990 STATEWIDE FUNDING NEEDS

PROGRAM	COST ESTIMATE	SECTION 319 FUNDS REQUESTED	SOURCE OF NON-FEDERAL FUNDS
Program Development	207,014	15,000	State Grants
Assessment	(See Assessment Report)		
Monitoring	76,250	41,320	State Grants
Education	108,236	93,052	State Grants
Agriculture			State Grants
Alternative Irrigation Div.	30,000	30,000	
Otter Cr.	231,000	60,000	
E. Spring Cr.	157,000	75,000	
Musselshell R.	125,000	125,000	
Godfry Cr.	767,000	210,055	
Ninemile Cr.	159,800	94,600	
Threemile Cr.	114,560	89,560	
Salinity Control	239,700	13,000	
Forestry	17,960	17,960	State Grants
Resource Extraction			
Upper Blackfoot	422,000	15,000	State Grants
Elkhorn Cr.	300,000		
Groundwater	68,900	68,900	
TOTAL	3,024,420	948,447	

3. EXISTING AUTHORITIES AND PROGRAMS TO ADDRESS NONPOINT SOURCE POLLUTION

Introduction

Nonpoint source pollution can occur as a result of a wide variety of activities. Most land uses can result in nonpoint source pollution if the proper controls, actions, and management decisions are not undertaken. Montana has many programs and authorities directed at protection of water quality. This Nonpoint Source Pollution Management Program, prepared in response to the recently enacted Section 319 of the Federal Clean Water Act fully utilizes these programs and authorities which assist, encourage, and, in some cases, require implementation of BMPs to control nonpoint source pollution.

3.1 State and Local Laws and Regulations

Montana Water Quality Act. The Montana Water Quality Act (MWQA) provides the principal state statutory authority for water quality management in Montana. The MWQA establishes that it is the public policy of Montana to: (1) conserve water by protecting, maintaining, and improving the quality and potability of water for public water supplies, wildlife, fish and aquatic life, agriculture, industry, recreation and other beneficial uses; (2) provide a comprehensive program for the prevention, abatement and control of water pollution.

The Department of Health and Environmental Sciences (DHES) administers the provisions of the MWQA under the oversight of the Board of Health and Environmental Sciences.

The MWQA provides authority for the DHES to advise, consult and cooperate with other states, other state and federal agencies, affected groups, political subdivisions, and industries in the formulation of a comprehensive plan to prevent and control pollution. It also allows the DHES and the Board of Health and Environmental Sciences to establish state water quality standards for the protection of present and future beneficial uses. Causing pollution of state waters, or placement of wastes in a location

where they are likely to cause pollution of state waters, is also prohibited by the MWQA.

The MWQA has a nondegradation policy which requires: ". . . that any waters whose existing quality is higher than the established water quality standards be maintained at that high quality unless it has been affirmatively demonstrated to the board that a change is justifiable as a result of necessary economic or social development and will not preclude present and anticipated use of these waters . . ."

The MWQA defines pollution as: "contamination or other alteration of the physical, chemical, or biological properties of any state waters which exceeds that permitted by Montana water quality standards, including but not limited to standards relating to change in temperature, taste, color, turbidity or odor; or the discharge, seepage, drainage infiltration, or flow of any liquid, gaseous, solid, radioactive, or other substance into any state water which will or is likely to create a nuisance or render the waters harmful, detrimental, or injurious to public health, recreation, safety, welfare, livestock, wild animals, birds, fish or other wildlife. A discharge, seepage, drainage, infiltration or flow which is authorized under the pollution discharge permit rules of the board is not pollution under this chapter."

An authorized representative of the DHES, upon presentation of his credentials may, at reasonable times, enter upon any public or private property to investigate conditions relating to pollution of state waters. The DHES is authorized to "take appropriate enforcement action on its own initiative to prevent, abate and control the pollution of State waters." The Department may issue compliance orders to violators of the MWQA. Compliance orders must specify the condition, limitation, standard or other requirements of the Act which is violated. Civil penalties not to exceed $10,000 per day of violation, and criminal penalties not to exceed $25,000 per day of violation can be levied under the MWQA.

State Water Quality Standards and the definition of pollution established under the MWQA, and the prohibition against causing

pollution of state waters or placing wastes in a location where they are likely to cause pollution of state waters provides broad authority for the DHES and the Board of Health and Environmental Sciences to control nonpoint source pollution. Authorities for enforcement appear to be available to mandate implementation of BMPs for the prevention, abatement and control of pollution.

The MWQA defines "natural" as conditions or material present from runoff or percolation over which man has no control or from developed land where all reasonable land, soil, and water conservation practices have been applied. Conditions resulting from the reasonable operation of dams on July 1, 1971 are natural. Reasonable conservation practices are defined in Montana's Water Quality Standards (ARM 16.20.603).

The DHES has tentatively interpreted "reasonable" to mean that land, soil and water conservation practices (i.e., BMPs) must protect present and reasonably anticipated beneficial uses. The DHES notes that without such an interpretation state waters would be allowed to deteriorate incrementally even with application of BMPs. This would clearly be in conflict with the state policy to protect, maintain and improve water quality.

Despite the authorities provided in the MWQA, DHES has not developed a broad regulatory nonpoint source control program. Impairment of beneficial uses by nonpoint source pollution is generally subtle and gradual. Individual episodes of nonpoint source pollution often have minimal impacts, making it difficult to demonstrate impairment to uses. The cumulative impact of many nonpoint source pollution causing activities of course may be significant. For these reasons and due to agency resource limitations the MWQA authorities have been used judiciously and selectively in response to public complaints and to control the more serious nonpoint source pollution episodes.

Sanitation in Subdivisions (MCA 76-4-101 et.seq.). The Sanitation in Subdivision Act 76-4-101 through 76-4-131 MCA extends present laws controlling water supply, sewage disposal, and solid waste disposal to include individual wells affected by adjoining

sewage disposal and individual sewage systems.

This act regulates contamination of ground and surface water from subdivisions. Individual sewage disposal systems and storm water disposal are specifically addressed. Minimum depths to ground water, distances from surface water and distances between drinking water sources and individual sewage systems are specified to insure that ground and surface waters are not contaminated. Storm water must be treated if in its untreated state it will degrade receiving waters.

The use of a conventional individual subsurface sewage treatment system is precluded if at any time the groundwater reaches six feet or less from the natural ground surface. There must be a minimum separation of four feet between the bottom of the subsurface sewage treatment system and the seasonal high groundwater elevation.

Minimum horizontal distances from 100-year flood levels of any waterbody or watercourse is 100 feet. Minimum distance between a well and septic tank is 50 feet and between a well and sewage treatment field is 100 feet. A copy of the act and administrative rules are included in Montana's Best Management Practices Manual.

Montana Stream Protection Act (MCA 87-5-501). The Montana Stream Protection Act (MSPA) establishes a regulatory mechanism for stream bank and stream channel alterations carried out by agencies of state government, counties, municipalities or other subdivisions of the state.

The MSPA declares that it is "the policy of the State of Montana that its fish and wildlife resources, particularly its fishing waters within the state are to be protected and preserved to the end that they be available for all time, without change, in their natural existing state except as may be necessary and appropriate after due consideration of all factors involved."

The MSPA provides a mechanism to require implementation of BMPs in association with stream bank and stream channel modifications carried out by governmental entities. Agencies are required to notify the Department of Fish, Wildlife and Parks

(DFWP) of any construction project or hydraulic project which may "obstruct, damage, diminish, destroy, change, modify or vary the natural existing shape and form of any stream or its banks or tributaries by any type or form of construction." Applicants are required to provide preliminary construction plans to the DFWP at least 60 days prior to commencement of final plans for construction. Within 30 days of receipt of such plans the DFWP has to notify the applicant whether or not a proposed construction project will adversely affect fish and game habitat. The DFWP is also expected to make recommendations to eliminate or diminish adverse effects.

Disputes between the applicant and the DFWP are arbitrated by a three-person committee appointed by judges of the judicial district or districts in which the project is located. The arbitration committee can hear testimony from all concerned parties, and can issue a decision signed by two members of the committee. Decisions of the arbitration committee are binding on all parties.

The DFWP also maintains Memorandums of Understanding (MOUs) with several federal agencies regarding federal projects which might adversely affect fish and wildlife resources.

Penalties of not less than $100 nor more than $500 for each day of violation, not to exceed a total of $1,000, can be assessed under the MSPA. In addition, at the discretion of the court an agency can be directed to restore a damaged stream to its prior condition. The DFWP utilizes Form 124, "Notice of Construction of Hydraulic Projects Affecting Fishing Waters" for project notification. Accordingly, the MSPA administration process is frequently referred to as the 124 process.

The Natural Streambed and Land Preservation Act of 1975 (MCA75-7-101). The Natural Streambed and Land Preservation Act of 1975 establishes a quasi-regulatory mechanism for stream bank and stream channel alterations carried out by persons, corporations or entities not covered under the Montana Stream Protection Act. The Natural Streambed and Land Preservation Act declares that: "It is

the policy of the state of Montana that its natural rivers and streams and the lands and property immediately adjacent to them within the state are to be protected and preserved to be available in their natural or existing state and to prohibit unauthorized projects and in so doing to keep soil erosion and sedimentation to a minimum, except as may be necessary and appropriate after due consideration of all factors involved. Further, it is the policy of this state to recognize the needs of irrigation and agricultural use of the rivers and streams of the state of Montana and to protect the use of water for any useful or beneficial purpose as guaranteed by the Constitution of the State of Montana."

The law requires persons proposing projects involving physical alteration or modification of a stream bed or stream channel to present written notice of the project to supervisors of the conservation district in which the project takes place. The supervisors determine whether a proposed project is subject to review under the Natural Streambed and Land Preservation Act. If they determine that a project is subject to review they notify the Department of Fish, Wildlife and Parks (DFWP). The DFWP has the option of requesting an on-site inspection by a team, consisting of one representative of the supervisors, one representative of the DFWP and the applicant or his representative. After an on-site team inspection each member of the team recommends in writing whether the project should be denied, approved or modified. The supervisors then review the proposed project and affirm, overrule, or modify the individual team recommendations and make a decision on the project within 60 days.

If a member of the team or the applicant disagrees with the supervisor's recommendation, an arbitration panel may be requested and appointed to hear the dispute and make a final written decision. The arbitration panel is selected by the senior judge of the judicial district in which the dispute takes place.

No prior notice or approval is necessary for emergency actions taken to safeguard life or property. However, notice must be given to the supervisors within 15 days following the emergency action.

A team will be called together as described above to evaluate the project.

Penalties of not less than $25 nor more than $500 per day of violation may be assessed by the court. The court may also require that the damaged stream be restored to as near its prior condition as possible.

The Natural Streambed and Land Preservation Act was advanced in the 1975 Montana State legislature as Senate Bill 310. Accordingly, the authorization from the Conservation District to carry out a project is frequently called a "310 permit". The 310 law also prohibits use of junked motor vehicles for streambank protection.

Land Use Regulations. Conservation districts in Montana have the authority under Title 76, Chapter 15, Part 7, Montana Codes Annotated, to formulate regulations governing the use of lands within the district in the interest of conserving soil and water resources and preventing and controlling erosion. Such regulations must undergo public hearings and are subject to a vote of qualified electors within the district.

The regulations are embodied in an ordinance. Upon voter approval and adoption by the conservation district board of supervisors the ordinance has the force and effect of law in the district and is binding and obligatory upon all occupiers of lands within the district.

The regulations contained in such ordinance may include:

1. Provisions requiring the carrying out of necessary engineering operations;
2. Provisions requiring observance of particular methods of cultivation or grazing;
3. Specifications of cropping and range programs and tillage and grazing practices to be observed;
4. Provisions requiring the retirement from cultivation of highly erosive areas or of areas on which erosion may not be adequately controlled if cultivation is carried on; and

5. Provisions for such other means, measures, operations, and programs as may assist conservation of soil and water resources and prevent or control erosion in the district.

The board of supervisors can enforce the regulations through petition to the district court system asking the court to require that action be taken by the defendant to comply with the regulations and to order that if the defendant fails to so comply, the supervisors may provide for the work to be done to bring the land into conformity with the requirements of such regulations and recover the costs and expenses thereof, with interest, from the defendant.

Two conservation districts (Lewis & Clark and Petroleum) have exercised their authority to enact such ordinances.

Montana Environmental Policy Act (MCA 75-1-101). The Montana Environmental Policy Act (MEPA), modeled after the National Environmental Policy Act (NEPA), requires a state agency to prepare an environmental impact statement (EIS) before taking any major action which will significantly affect the quality of the environment. The EIS must discuss environmental impacts of the proposed action, alternatives to the proposal which might have lesser impacts, mitigation measures, irretrievable commitments of resources, etc. The EIS requirement applies to issuance of state permits, licenses and approvals for private actions which will have significant environmental impacts. Individual state agencies have adopted rules for implementing MEPA:

Agriculture: 4.2.301 et. seq, ARM

Fish, Wildlife, & Parks: 12.2.401 et. seq, ARM

Health & Environmental Sciences: 16.2.601 et. seq, ARM

Highways: 18.2.201 et. seq, ARM

State Lands: 26.2.601 et. seq, ARM

Livestock: 32.2.201 et. seq, ARM

Natural Resources: 36.3.501 et. seq, ARM

Environmental Quality Council

MEPA allows an opportunity for early consideration of nonpoint source pollution impacts of proposed projects, and discussion of

appropriate BMPs as mitigative measures. The Environmental Quality Council oversees and reports on the implementation of MEPA to the legislature. Procedures for implementation of MEPA generally include the following sequence:

1. After receipt of a complete application for a permit or license, the agency will prepare a preliminary environmental review (PER) to determine whether a full EIS is necessary. If the need for an EIS is clear, the PER step may be by-passed.
2. If the PER indicates no potential significant environmental impact, no EIS need be prepared and the permit application will be processed normally.
3. If an EIS is necessary, the agency will prepare a draft EIS which is circulated to other agencies and to the public for comment. At least 30 days must be allowed for comment, with a 30-day extension available on request. The applicant has the opportunity to respond to comments.
4. If the agency determines it is necessary, a public hearing will be held after publication of the draft EIS, to receive public comment.
5. A final EIS will be prepared, if necessary, incorporating responses to comments on the draft, and comments received at the hearing, if one was held.

Montana Major Facility Siting Act (MCA 75-20-101 et. seq.). The Montana Major Facility Siting Act provides a means for state input into the siting of major facilities that generate or transmit electricity, produce natural gas or oil or transmit them by pipeline, enrich uranium minerals, utilize or convert coal, or utilize geothermal resources. A project sponsor submits a joint application to the Department of Natural Resources and Conservation (DNRC) and Department of Health and Environmental Sciences (DHES) for a certificate of environmental compatibility and public need. Copies also go to each unit of local government in which the facility is located, and to federal officials charged with

protecting the environment.

The DHES has one year after receipt of an application to approve or reject the project on the basis of its ability to meet water quality standards. If the DHES can certify the project, DHES findings are integrated into the DNRC environmental assessment and subsequent EIS, if necessary under the Montana Environmental Policy Act. Appropriate BMPs can be specified as a condition of receipt of the certificate. The Board of Natural Resources and Conservation holds hearings and issues a final decision. This process allows an opportunity for evaluation of nonpoint source pollution impacts, and discussion of appropriate BMPs as mitigative measures.

Rules for implementation of the Major Facility Siting Act are published in the ARM 36.7.1201 et. seq.

Montana Strip and Underground Mine Reclamation Act (MCA 82-4-201 et. seq.). The Montana Strip and Underground Mine Reclamation Act (MSUMRA) requires that an operator must obtain a prospecting and/or operating permit from the Department of State Lands (DSL) before engaging in strip or underground mining. The MSUMRA declares that it is the policy of state to "maintain and improve the State's clean and healthful environment for present and future generations; protect its environmental life support system from degradation; prevent unreasonable degradation of its natural resources; demand effective reclamation of all lands disturbed by the taking of natural resources and maintain state administration of the reclamation program; and to provide for the orderly development of coal resources through strip or underground mining to assure the wise use of these resources and prevent the failure to conserve coal."

MSUMRA allows the DSL to review prospecting and reclamation plans to assure protection of environmental quality. Applications must include information regarding climate, geology, hydrology, neighboring surface waters, vegetation, etc. A reclamation plan must be prepared by the operator to identify methods to protect water quality (e.g., grading, backfilling, erosion control,

topsoiling, revegetation, etc.) A reclamation bond must also be posted. Reclamation plans are subject to annual review and modification.

Review and approval of prospecting, operating and reclamation plans provides an opportunity to review potential water quality impact of mining projects and to establish appropriate BMPs for the control of nonpoint source pollution as permit conditions.

Rules for implementation of MSUMRA have been adopted in the ARM 26.4.1001 et. seq., 24.4.1101-1125, and 26.4.301-912.

Montana Opencut Mining Act (MCA 82-4-101 et. seq.). The Montana Opencut Mining Act (MOMA) applies to bentonite, clay, scoria, phosphate rock, sand or gravel mining operations. A miner for such operations is required to enter into a reclamation contract with the State Board of Land Commissioners before mining is allowed. A reclamation plan must be submitted, and a reclamation bond must be posted. Exemptions are available for state and local governmental agencies, small operations (less than 10,000 cubic yards removed), and on federal lands if the Board determines that federal regulations are at least as stringent.

The reclamation contract allows opportunity for nonpoint source pollution impacts to be evaluated, and for implementation of appropriate BMPs to be made a condition of the contract.

Rules for implementation of the Open Cut Mining Act have been adopted in the ARM 26.4.201 et. seq. and 24.30.1301.

Hardrock Mining Statutes (MCA 77-3-101 et. seq.) (82-4-301 et. seq.). Hardrock mining (i.e. mining other than oil, gas, bentonite, clay, coal, sand, gravel, phosphate rock or uranium) is regulated by statutes without short titles. These statutes are found in MCA 77-3-101 et. seq. and 82-4-301 et. seq. An exploration license and an operating permit must be obtained from the Department of State Lands (DSL) prior to prospecting for and operating a hardrock mine, respectively. The DSL reviews exploration plans, mine operating plans, and post-mining reclamation plans to assure protection of environmental quality. A reclamation plan must identify the methods to protect water

quality. The plan, among other things, must include provisions for preventing acid mine drainage; appropriate settling or treatment basins; re-establishment of vegetative cover on disturbed lands (except for open pits or rock faces not feasible to reclaim); and contouring to control erosion and infiltration into disturbed areas, tailings impoundments and waste rock dumps. A reclamation bond must be also posted.

The review and approval process for exploration licenses and operating permits allows opportunity for evaluation of potential water quality impacts of hardrock mining projects, and for establishment of appropriate BMPs for control of nonpoint source pollution as permit conditions.

A "small miner" exclusion exempts small mining operations from the hardrock mining exploration license and operating permit requirements. A "small miner" is an operator who removes less than 36,500 tons annually, who does not hold a hardrock mining permit for other operations in the state and whose operations leave no more than five acres disturbed and unreclaimed. The small miner must agree in writing not to pollute streams, and to protect human and animal safety.

Rules for implementation of the hardrock mining exploration licenses and operating permits have been adopted by the DSL in the ARM 26.4.101 et. seq., 26.4.1101-1121, and 24.30.1301.

Solid Waste Disposal (MCA 75-10-233 et. seq.). The Solid Waste Management Act, regulates solid waste disposal in Montana. The purpose of this act is "to encourage the good management of solid waste and the conservation of natural resources through the promotion or development of systems to collect, separate, reclaim, recycle, and dispose of solid waste for energy production purposes where economically feasible and to provide a coordinated state solid waste and resource recovery plan."

The following are among the policies established by this act: maximum recycling from solid waste to protect the public health, welfare, and quality of the natural environment; the state shall provide technical advisory assistance to local governments and

other affected persons in the planning, developing, financing, and implementation of solid waste management systems.

The rules established in accordance with this act stipulate acceptable minimum management practices (BMPs) for solid waste disposal. A copy of the act and administrative rules are included in Montana's Best Management Practices Manual.

The Montana Hazardous Waste Act (75-10-401 et. seq.). The Montana Hazardous Waste Act establishes a program of regulation over the generation, storage, transportation, treatment, and disposal of hazardous wastes. This act establishes that it is the policy of this state to "protect the public health and safety, the health of living organisms, and the environment from the effects of the improper, inadequate, or unsound management of hazardous wastes; to establish a program of regulation over the generation, storage, transportation, treatment, and disposal of hazardous wastes to assure the safe and adequate management of hazardous wastes within this state; and to authorize the department to adopt, administer, and enforce a hazardous waste program pursuant to the federal Resource Conservation and Recovery Act of 1976 (42 U.S.C. 6901-6987), as amended."

The rules established in accordance with this act constitute the BMPs for management of hazardous wastes and are included in Montana's Best Management Practices Manual.

Montana Agricultural Chemical Ground Water Protection Act (80--15-101 et. seq). This act administered jointly by DHES and the Montana Department of Agriculture establishes that it is the public policy of Montana to:

(1) protect ground water and the environment from impairment or degradation due to the use of agricultural chemicals;

(2) allow for the proper and correct use of agricultural chemicals;

(3) provide for the management of agricultural chemicals to prevent, minimize, and mitigate their presence in ground water and

(4) provide for education and training of agricultural chemical

applicators and the general public on ground water protection, agricultural chemical use, and the use of alternative agriculture methods.

The agricultural chemicals referred to in this act are those which are commercially produced -- not those that are naturally occurring -- such as livestock waste. A person who intentionally violates a specific agricultural chemical ground water management plan may be subject to fines of $25,000 to $50,000 per day of violation.

HB 678- This bill requires an owner or operator to notify the Department of State Lands (DSL) prior to conducting forest practices on private lands. The DSL will provide the applicant with a copy of Montana's Silvicultural BMPs and may require onsite consultation if the project has potential water quality impacts. Onsite consultation may also include the DHES and the Conservation Districts to provide information to owners and operators. No additional regulatory authority to require specific BMPs is conferred by this legislation. This act became effective January 1, 1990.

3.2 Federal Laws

3.2.1 Federal Clean Water Act. In 1972 Congress passed the Federal Water Pollution Control Act Amendments (PL 92-500). This law provided a comprehensive national framework for water pollution control and water quality management for the United States. The goal of the Act was to restore and maintain the integrity of our nation's waters, and to provide water quality sufficient for "protection and propagation of fish, shellfish and wildlife, and provision of recreation in and on the water." The Act was amended again in 1977, 1981 and 1987, and is now commonly referred to as the Clean Water Act (CWA).

Section 205(j). The 1981 amendments to the Clean Water Act added Section 205(j) which provided for State water quality agencies to receive one percent of the state's federal wastewater treatment construction grants allotment or $100,000 whichever

amount was greater, to carry out water quality management planning activities. This allowed the states to receive Federal funding to help carry out basic water quality management planning activities after the loss of 208 funds.

Activities conducted by the WQB in accordance with Section 205(j) are:

- Coordinate implementation of the Governor's approved Statewide Water Quality Management Plan.
- Coordinate water quality management planning for the entire state.
- Maintain ambient monitoring network to determine chemical and biological quality and trends in state waters.
- Conduct site-specific investigations to evaluate water quality impact of selected activities and the effects of mitigation measures.
- Provide technical assistance to land and water management agencies at the state and local level.
- Provide an instream flow reservation program to protect water quality.
- Coordinate activities designed to control agricultural non-point source pollution in the state.
- Provide coordination services for the Bureau with the Chemistry Laboratory.
- Prepare and submit 305(b) report on water quality.
- Provide technical assistance to other Water Quality Bureau programs.
- Evaluate impact of major activities (dams, mines, timber sales, power plants, pipelines, etc.) on aquatic environment.
- Review Environmental Impact Statements prepared by state and federal agencies.
- Provide field investigation and sampling as necessary to identify pollution problems from complaints.

The most recent 1987 amendments provide for the States to receive an additional one percent of Section 205(j) funds to help prepare a nonpoint source assessment report and management program.

These funds are called 205(j)(5) funds.

Section 208. Section 208 of the CWA provided for the development of water quality management plans by states and by designated areawide water quality management planning agencies. These plans were to address both point and nonpoint source pollution. They were to include water quality assessments and inventories, waste load allocations for point sources, and BMPs and designated management agencies for nonpoint sources.

In 1975 the Governor of Montana designated four water quality management planning areas. Areawide Planning Organizations (APOs) were created and designated to have the responsibility for water quality management planning within these geographic areas. The Yellowstone-Tongue APO and the Middle-Yellowstone APO were created to address water quality problems associated with energy development in southeastern Montana. The Flathead Drainage 208 project and the Blue Ribbons of the Big Sky Country APO were created to focus upon the protection and preservation of water quality in the Flathead Lake, and Madison/Gallatin Valley areas, respectively. The Governor designated the Water Quality Bureau of the Department of Health and Environmental Sciences as the agency responsible for water quality management planning in the remainder of the state.

Funds were appropriated by Congress under Section 208 from Federal fiscal year 1974 through 1981 to allow states and areawide planning organizations (often referred to as 208 planning agencies) to prepare water quality management plans. Areawide water quality management plans were prepared by Montana's 208 agencies. A statewide water quality management plan was prepared by the Water Quality Bureau, Department of Health and Environmental Sciences. Federal funding for 208 water quality management planning activities was discontinued after Federal FY 1981. Montana's four areawide 208 planning organizations lacked the resources to continue water quality management planning activities after loss of federal support. The Water Quality Bureau remains the only organization of the originally designated agencies with resources

to conduct water quality management planning activities.

The Statewide 208 Water Quality Management Plan designated the U.S. Forest Service (USFS) and the Bureau of Land Management (BLM) as the management agencies for nonpoint source pollution control on federal land; and the County Soil Conservation Districts as lead management agencies for nonpoint source pollution control on non-federal land. The Water Quality Bureau (WQB) has developed cooperative agreements with the USFS and BLM for water quality management on lands under the jurisdiction of these agencies. The WQB also has developed Memoranda of Understanding between County Conservation Districts and the Department of Natural Resources and Conservation for a nonpoint source pollution control program.

This basic framework for water quality management and nonpoint source pollution control, which was developed under the 208 program, remains in place today. More details are included in the Statewide Water Quality Management Recommendations of the Statewide Water Quality Management Planning Project, dated October 1979 and prepared by the MDHES-WQB.

Section 303. Section 303 of the Clean Water Act requires that EPA review and approve State Water Quality Standards (WQS) to assure the WQS are consistent with the requirements of the Act. Water Quality Standards are provisions of State or Federal law which consist of a designated use or uses for the waters of the United States, and water quality criteria to maintain and protect such uses. Water quality standards must protect public health or welfare, enhance the quality of water and serve the purposes of the Act. Accordingly, WQS influence and affect all water pollution control programs.

EPA guidance indicates that the relationship between nonpoint source pollution control and water quality standards should be based upon three basic principles:

1. BMPs must be designed to meet Water Quality Standards (WQS). It is recognized that BMPs are the primary mechanism to enable the achievement of WQS. It is intended that proper installation of state-approved BMPs

will achieve WQS. For proposed nonpoint source activities, BMPs designed and implemented in accordance with a state-approved process will normally constitute compliance with the Clean Water Act. Once BMPs have been approved by the state, the BMPs become the primary mechanism for meeting WQS. Proper installation, operation, and maintenance of state-approved BMPs are presumed to meet a landowner's or manager's obligation for compliance with applicable WQS.

2. BMP effectiveness must be demonstrated. Once the BMPs have been installed/applied and sufficient time has elapsed to establish the controls and monitor their effectiveness, attainment or maintenance of WQS and other water quality goals should be verified. If subsequent evaluation indicates that approved and properly implemented BMPs are not achieving WQS, the state should take steps to revise the BMPs, evaluate the WQS for appropriateness, or both. Through the iterative process of monitoring and adjustments of BMPs and/or WQS, it is anticipated that BMPs will lead to achievement of WQS.
3. If BMPs cannot adequately protect and maintain water quality standards, the state must either revise the BMPs to ensure protection and maintenance of water quality standards or revise the standards or reevaluate the activity. If WQS are not being met, then the state may require that the NPS controls be modified or the practice causing the nonpoint source pollution cease.

It should also be noted that EPA's regulations to implement Section 303 (40 CFR Part 131) require that states adopt an antidegradation policy. Antidegradation policy requires that:

1. Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.
2. Where the quality of the waters exceeds levels necessary to support propagation of fish, shellfish, and wildlife

and recreation in and on the water, that quality shall be maintained and protected unless the state finds after full satisfaction of the intergovernmental coordination and public participation provisions of the state's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the state shall assure water quality adequate to protect existing uses fully. Further, the state shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control.

3. Where high quality waters constitute an outstanding national resource, such as waters of national and state parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

Nonpoint pollution activities are not exempt from the antidegradation policy. States are required to assure that the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control shall be achieved. If a particular activity will degrade water quality even after all cost-effective and reasonable BMPs have been applied, states have to:

1. Identify proposed water quality degradation (where and to what degree water quality will be lowered) and provide the public with an opportunity to comment on the proposed action.
2. Determine that the degradation is necessary to accommodate important social or economic development.

Section 314. Section 314 of the Clean Water Act requires the states to submit a biennial report on water quality in lakes

in the state. These reports are to identify eutrophic condition of publicly-owned lakes; processes to control sources of pollution in such lakes; procedures in conjunction with appropriate federal agencies to restore the quality of such lakes; methods to mitigate effects of high acidity; a list of publicly-owned lakes for which uses are impaired; and an assessment of the status and trends of water quality in lakes including the nature and extent of pollution loading from point and nonpoint sources.

The information required under Section 314 may be submitted in the state's biennial water quality assessment report required under Section 305(b) of the CWA. Funding is authorized to make grants to states that have submitted satisfactory lake water quality reports to control pollution and restore and protect lakes. An amount of $30,000,000 has been authorized nationally per fiscal year for federal fiscal years 1987, 1988, 1989, and 1990 for lake restoration grants. It is not known at this time whether funding will be appropriated to address nonpoint pollution problems affecting lakes in Montana.

Section 319. The 1987 Water Quality Act passed by Congress on February 4, 1987 amended the Clean Water Act to add a new Section 319, entitled "Management of Nonpoint Sources of Pollution." Section 319 requires each state to develop a comprehensive statewide nonpoint pollution assessment report, and to submit a management program for control of nonpoint source pollution in the state.

The assessment report should identify state waters, which without additional action to control nonpoint sources of pollution, cannot reasonably be expected to attain or maintain applicable water quality standards, goals, or requirements of the Act. The assessment report should also identify categories and subcategories of nonpoint sources, as well as particular nonpoint sources that contribute pollution to identified waters, and include descriptions of state management processes and control programs.

The nonpoint management programs are to include: best management practices to reduce pollutant loadings from each

category and subcategory of nonpoint source pollution identified in the state's assessment report; specific management programs to achieve implementation of best management practices; a schedule for program implementation; certification of necessary legal authorities; and sources of funding to support implementation. The assessment report and the management program must be submitted to EPA, which has 180 days to approve or disapprove the report and program.

Upon approval of the assessment report and management program, states are eligible for Section 319 grants from EPA to assist in implementing the management program. The federal share of implementation grants shall not exceed 60 percent. Eligible implementation costs include costs of implementing regulatory or non-regulatory programs for enforcement, technical assistance, financial assistance, education, training, technology transfer and demonstration projects. Monitoring which is done to support design of watershed-level control programs or to evaluate a particular implementation project is eligible. General assessment and planning activities as well as administrative costs are not considered implementation. Grants may also be provided for protecting ground water quality with the maximum federal share set at 50%.

An authorization of $400 million for federal fiscal years 1988, 1989, 1990 and 1991 was provided for Section 319 implementation grants. Funds, however, were not appropriated by Congress in FFY 1988 or 1989. In FFY1990, $38.6 million was appropriated nationwide. Montana received an initial grant of $658,447. EPA has been directed to give priority in making 319 implementation grants to nonpoint projects which will control particularly difficult nonpoint source problems, implement innovative control methods or practices, control interstate nonpoint source pollution, or carry out ground water quality protection activities.

Each state is required to submit an annual report to EPA and the Administrator of EPA is required to report annually to Congress

on the program.

A new reserve from the state's wastewater treatment construction grant program, one percent of the state's construction grant allocation or $100,000, whichever amount is greater, was used by the state in FY89 and 90 to develop the assessment report and management program. In addition the State Governor asked EPA to approve the use of discretionary funds available in the state's allocation of wastewater treatment construction grant program to fund implementation of nonpoint and groundwater protection programs in the amount of $290,000 for FY90 projects.

Section 401. Section 401 of the Federal Clean Water Act requires any applicant for a Federal license or permit for the conduct of any activity which results in a discharge into the navigable waters of the U.S. to obtain certification from the state that the discharge will comply with the applicable provisions of Sections 301, 302, 303, 306, and 307 of the Clean Water Act (State Water Quality Standards, effluent limitations, etc.). This 401 certification authority is administered in Montana by the Water Quality Bureau of the Department of Health and Environmental Sciences. Section 401 provides the state with authority to assure that federally permitted or licensed activities which can result in nonpoint source pollution, do not violate State Water Quality Standards (State Water Quality Standards specify uses for the waters of the state, and the water quality criteria necessary to protect those uses.)

Section 401 provides the state with a mechanism to modify potentially damaging federally permitted or licensed projects. This authority is frequently applied toward dredge and fill permits issued by the U.S. Army Corps of Engineers and licenses issued by the Federal Energy Regulatory Commission. Mining permits issued by the Forest Service and Bureau of Land Management are being brought under this 401 certification jurisdiction through negotiated revisions to Memoranda of Understanding between the MDHES and the Federal land management agencies.

Section 404. Section 404 of the Federal Clean Water Act establishes a permit program for the discharge of dredged or fill material into the waters of the U.S. The U.S. Army Corps of Engineers (COE), Omaha District, administers this program in Montana. Discharges of dredged or fill material are frequently associated with nonpoint source pollution-causing activities occurring in or adjacent to streams and wetlands. The 404 permit program allows requirement of appropriate BMPs for control of nonpoint source pollution as a condition of the permit. The program also allows opportunity for consultation among the COE, EPA, USFWS, MDFWP and Conservation Districts regarding appropriate BMPs.

Discharges of dredged or fill material into wetlands are regulated under the 404 program. This serves as a means for protecting wetlands, thus preserving their important function in improving water quality through assimilation of nutrients and retention of sediments.

Section 525. The 1987 Water Quality Act amended the Clean Water Act to add a new Section 525 entitled, "Study of Pollution in Lake Pend Oreille, Idaho." This section requires EPA to conduct a comprehensive study of the sources of pollution in Lake Pend Oreille and the Clark Fork River and its tributaries in Idaho, Montana and Washington. Specific funding to carry out such studies was not authorized. However, EPA has been directed to find funding in its budget to carry out such a study. Initial consultations indicate that Section 525 studies in Montana will be directed at assessing the relationship between nuisance growth of attached algae in the Clark Fork River and nutrient contributions from point and nonpoint sources of pollution.

3.2.2 CERCLA/SARA. The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) commonly known as the Superfund law, requires the USEPA to identify, investigate and clean up uncontrolled hazardous waste sites not regulated by the Resource Conservation and Recovery Act (RCRA) or the Toxic

Substances Control Act (TSCA). Many of these uncontrolled hazardous sites constitute nonpoint source pollution problems. Placement of a site on the National Priorities List (NPL) makes it eligible for federal funds available to Superfund. The Superfund is a national trust fund financed by taxes on chemicals and petroleum products. This fund is reimbursable: EPA generally can take legal action to recover its cleanup costs from those identified as responsible for release of the hazardous wastes.

3.2.3 U.S. Forest Service. The U.S. Forest Service (USFS) has made progress in reducing or preventing non-point source pollution in stream segments on National Forest System lands previously identified with water quality problems in the 1986 Montana 305b Report. Maintenance of water quality was a priority in all other streams on National Forest lands.

This has been accomplished primarily through implementation of the Northern Region's (Region 1) Water Quality which operateswithin the NEPA process, conducting cumulative effects analysis, application of soil and water conservation practices, conducting monitoring, evaluation and feedback, and coordination and cooperation with other agencies. Each of these strategy components is briefly described below.

1. NEPA Process. Under the NEPA process, and as part of the Forest Plan Implementation procedure, site specific water quality effects are evaluated by an inter-disciplinary team to ensure that the proposed activity will meet state water quality standards and Forest Service water quality goals. Projects that will not meet state standards or protect designated beneficial uses as stated in Forest Plans will be redesigned, rescheduled, or dropped.
2. Cumulative Effects Analyses. A watershed cumulative effects analysis is also conducted as part of the NEPA process. The analysis is conducted to ensure that the effects of the proposed activity, when combined with the

impacts of other projects in the area including activities on state and private lands, will meet standards for water quality. This analysis requires that sediment and water yields won't be increased or fishery habitat decreased beyond acceptable limits, as defined in Forest Plans. Opportunities are also identified for reducing or mitigating adverse effects on water-related beneficial uses such as through investments for fishery habitat or watershed improvements.

3. Soil and Water Conservation Practices. BMPs planned and applied by the USFS meet or exceed those recommended by the Watershed Cumulative Effects Cooperative. The best and most site-specific conservation practice is selected by an inter-disciplinary team for application to a specific project.

4. Monitoring, Evaluation, and Feedback. Monitoring, evaluation, and feedback of site-tailored BMPs insure that water quality and beneficial uses are protected. Project plans and administrative contracts are monitored and evaluated at various levels through structured reporting and field reviews during and after project implementation. In feedback, soil and water conservation practices are either validated or modified to protect water quality and beneficial uses on current projects, and the information obtained is cycled into future projects.

5. Coordination and Cooperation. The USFS cooperates with other state and federal agencies in Montana to prevent or minimize the effects of nonpoint source pollution. The USFS actively supports and participates on the Cumulative Watershed Effects Cooperative, under the leadership of the State Forester. The USFS recently signed a revised Memorandum of Understanding with the WQB to control nonpoint sources on USFS lands. Representatives of the WQB and the Department of Fish,

Wildlife and Parks frequently participate in Forest Service environmental analyses. The Forest Service is participating on two Environmental Quality Council study committees directed to analyze the relationship of forest practices and watershed effects, and develop a statewide list of silvicultural BMPs. The USFS contributes to the research efforts of the Montana Riparian Association, and collaborates with the Soil Conservation Service, BLM, and other agencies working to develop riparian management techniques to minimize nonpoint source pollution. (Copies of the following documents are included in the appendix: the DHES/WQB Memorandums of Understanding with both the USFS and BLM; House Joint Resolution 49; and the Cumulative Watershed Effects Cooperative Memorandum of Understanding and BMPs).

6. Other Efforts. Other efforts that have contributed toward the Forest Service's progress include: conducting a nonpoint source activity review on numerous forests; assisting the Governor's Office in the Clark Fork River Basin Study; localizing and calibrating the R-1/R-4 Sediment Model (Guide for Predicting Sediment Yields from Forested Watersheds); developing audio-visual and other training programs to communicate the Region's Water Quality Strategy internally and to various interested publics; working with the Department of State Lands, the University of Montana, and Plum Creek Timber to develop a project to monitor and address the effects of forest practices on water quality in the Flathead Basin.

3.2.4 Bureau of Land Management. The Bureau of Land Management (BLM) is the designated nonpoint source management agency for BLM land under an agreement with the Montana Department of Health and Environmental Sciences. In accordance with this agreement the BLM submits an annual report to the Water Quality Bureau and EPA which covers specific water quality problems by stream, probable causes

and how the BLM might initiate solutions and apply BMPs. The agency continues to be involved in resource management and educational programs and is a key participant in riparian restoration activities.

The BLM has monitored and funded hydrologic studies to assess potential impacts on water resources on their lands since 1976. Data obtained from this program are entered onto STORET and are updated annually.

3.2.5 Food Security Act of 1985. The Provisions in the Conservation Title of the Food Security Act of 1985 are designed to reduce soil erosion and retain wetlands. The provisions generally known as the Conservation Reserve, Conservation Compliance, Sodbuster, and Swampbuster are described as follows:

Conservation Reserve. The Conservation Reserve offers producers help in retiring highly erodible cropland. Through a bidding process, farmers and ranchers may put eligible cropland into a Conservation Reserve for 10 years and receive annual payments on the basis of their bids. Vegetative cover is necessary to protect the land from erosion, and if successfully bid into this program, cannot be grazed or hayed. Harvesting of commodity crops is prohibited.

Conservation Compliance. Conservation compliance applies if a producer continues to plant annually tilled crops on highly erodible fields. To remain eligible for certain USDA program benefits, from the Farmers Home Administration, Soil Conservation Service, Federal Crop Insurance and Agricultural Stabilization and Conservation Service, the producer must develop and be actively applying a locally approved conservation plan on highly erodible fields by January 1, 1990. A plan must be fully implemented by January 1, 1995.

Sodbuster. The sodbuster provisions of the Food Security Act are aimed at discouraging the conversion of highly erodible land for agricultural production. If a producer converts highly erodible noncropland to annually tilled crops, the producer may

lose eligibility for several other Department of Agriculture program benefits. The producer will remain eligible only if the land is farmed according to an approved conservation plan that is fully implemented.

Swampbuster. The swampbuster provision of the Act is aimed at discouraging the conversion of wetlands for agricultural purposes. The swampbuster was effective December 23, 1985 -- the date the Food Security Act was signed. If a wetland is converted to cropland, a producer will lose eligibility for certain USDA program benefits, not just on the converted wetland area, but on all lands farmed. Some limited exceptions may be approved on a case-by-case basis.

3.3 Financial Assistance

3.3.1 Federal

Agricultural Stabilization and Conservation Service

Agricultural Conservation Program. The Agricultural Stabilization and Conservation Service (ASCS) of the USDA administers cost share programs to pay part of the costs of BMPs which reduce erosion, and sediment delivery and or save water. In Montana, the ASCS cost shares between 50 and 75 percent of the installation costs (up to $3,500 per year) for qualifying conservation practices. Cost sharing is provided under annual agreements or under 3- to 10-year long-term agreements. Landowners may group together to solve soil and water conservation problems and be eligible for up to $10,000 annually. These group projects are known as pooling agreements.

Conservation Reserve Program. The Conservation Reserve Program, was authorized by the Food Security Act of 1985. ASCS administers the financial and compliance provisions of the Conservation Reserve Program (CRP). Under the CRP, producers enter a contract to place highly erodible crop land into a conservation reserve for a ten-year period. The producer seeds the land to permanent cover to control erosion. Producers agree not to harvest, graze or crop the land for ten years. Acreage basis,

allotments and quotas are reduced proportionately for the ten-year contract period. A significant change in the CRP program as of February 1988 allows the inclusion of areas dedicated to a vegetative filter strip along streams and permanent waterways. This strip to be planted to grass, shrubs or trees will normally be between 66 and 99 feet in width and should substantially increase streambank stability while substantially reducing sediments and nutrients and other chemicals from reaching water courses. Areas under CRP contract as filter strips must have previously been cropland and do not have to meet erodibility criteria of other CRP lands.

Forestry Incentives Program. The Forestry Incentives Program, authorized in 1973, provides cost-sharing for tree planting and timber stand improvement with private landowners. The Federal share of these costs ranges up to 65 percent. The maximum cost-share is $10,000 annually. The aims of the program are to increase production of timber and to improve the environment.

Rural Clean Water Program. The experimental Rural Clean Water Program, authorized in agricultural appropriations legislation for 1980 (93 Stat. 821) and 1981 (94 Stat. 3095), provides cost-sharing and technical assistance for installing measures that control nonpoint source pollution and improve water quality in rural America. The Federal cost-share level for project areas is not to exceed 75 percent unless waived. Participants enter into long-term (3 to 10 years) contracts with the Government.

Water Bank Program. The Water Bank Program, authorized in 1970, provides that persons having eligible wetlands in important migratory waterfowl nesting, breeding, and feeding areas could enter into 10-year agreements and receive annual payments for preventing the serious loss of wetlands and for preserving, restoring, and improving inland fresh water and designated adjacent areas.

Soil Conservation Service (SCS). The Soil Conservation Service administers three major programs in providing financial assistance to projects which may reduce pollution from nonpoint

sources. These programs are Public Law 566, the Great Plains Conservation Program, and the Resource Conservation and Development Program.

Great Plains Conservation Program. The purpose of the Great Plains Conservation Program is to conserve, protect, develop, and utilize the soil and water resources of the Great Plains region. Land users voluntarily enter into long-term contracts with the USDA to solve soil, water, and related resource problems. The legislation authorizes assistance to farmers and ranchers to prepare and implement conservation plans that control soil erosion and reduce the effects of the severe and erratic Great Plains climate. Appropriations for this program have remained fairly constant at about $20 million annually over the last decade.

The Great Plains Conservation Program is unique in several respects. First, it is targeted to a specific region of the country -- running north and south through parts of 418 counties in 10 States from Montana and North Dakota to New Mexico and Texas. Forty of Montana's 56 counties are within the program boundaries. Second, it utilizes a conservation plan as a basis for a long-term (3- to 10- year) contract between the private land user and the Federal Government. Third, it focuses on total conservation treatment of the entire operating unit as opposed to individual field treatment. Fourth, private land users receive cost sharing as contracted for installing enduring conservation practices and systems at a rate not to exceed 80 percent of the cost and up to a total of $35,000 per contract. Fifth, it provides for federal technical assistance to service the contract. Sixth, it commits the private land user to carry out and maintain all treatments required in the contract regardless of whether or not they are cost-shared.

Resource Conservation and Development (RC&D). The SCS provides financial assistance to three Resource Conservation and Development Areas (RC&Ds): the Bitterroot, the Headwaters and the Beartooth. These RC&Ds cover twelve counties and can provide money and technical expertise for installing projects which include

erosion control, flood prevention and water quality. Financial assistance varies between 50 and 100 percent for qualifying projects. Loans for the part of projects not covered by cost-share are available through Farm Home Administration. RC&Ds also provide valuable coordination for cooperation between individuals and units of government. In recent years, RC&Ds have been successful in obtaining grants for conservation oriented projects from nontraditional funding sources. The Headwaters RC&D has set up a grants library to help in the search for potential fund sources.

Public Law 566. Watershed Protection and Flood Prevention Act. Under this public law (83-566) projects can be multipurpose but the drainage areas treated cannot be larger than 250,000 acres. The SCS provides technical assistance for planning and installing project measures, pays the full cost of measures for flood prevention and shares the cost of other measures. Major water quality benefits include control of flooding, erosion and siltation. Loans for the nonfederal portion of these projects up to ten million dollars per project may be obtained from Farmers Home Administration (FmHA). Projects may include but are not limited to activities such as reservoirs, canals, pipelines, and seeding.

Abandoned Mine Lands. The Abandoned Mine Lands Bureau, Reclamation Division, Department of State Lands (DSL), is authorized to expend funds received from the federal Office of Surface Mining (OSM) for reclamation of lands disturbed by the mining of coal, uranium, hardrock minerals and open cut minerals, respectively, left in unreclaimed condition. Public Law 95-87, Surface Mining Control and Reclamation Act, Title VI, 1977 and Montana Code Annotated, Section 82-4-239, 323, and 424 authorize administration of the program. The Governor designated DSL to administer the program on November 15, 1977. The OSM approved the DSL plan on February 6, 1980.

The OSM collects a federal tax of $0.35 per ton of coal produced at the mine. Fifty percent of the tax, approximately $5

million annually, is allocated to the state program. Sites are prioritized and reclaimed based on criteria specified in the plan.

Farmers Home Administration. The Farmers Home Administration (FmHA) makes loans and grants in rural areas. Several of these below market rate loans benefit water quality concerns. Soil and water loans are made to individual farmers and ranchers to develop, conserve and properly use their land and water resources, and abate pollution. Loans are also available to associations of landowners to improve irrigation and other soil and water conservation facilities. Loans are authorized to supplement other programs of the USDA such as the Small Watershed Protection and Flood Prevention Act (PL566) and the Resource Conservation and Development (RC&D) project activities.

Bureau of Reclamation. Since its inception in 1902, the Bureau of Reclamation's primary function has been developing irrigation projects in the western United States through various programs to enhance the farm economy.

A number of programs have been established to provide assistance to irrigation districts for improved operation and management of the projects. Programs which may be applicable to the state's nonpoint source pollution program are generally a combination of financial and technical assistance and are as follows:

1. The Soil and Moisture Conservation (S&MC) Program provides assistance to irrigation projects for management of project-related erosion problems. Presently, funding for this program is limited; however, the program is capable of providing assistance with control of sediment from Reclamation irrigation projects.
2. Land Resource Management (LRM) Program is primarily aimed at management of federal lands around reclamation reservoirs. This is the major program along with some S&MC funds, used to control grazing, erosion, and needed revegetation at Tiber Reservoir. It has also been used for erosion control at Clark Canyon, Gibson, Willow

Creek, Nelson, and Fresno reservoirs.

3. The Reclamation Reform Act requires that irrigation districts with repayment or water service contracts develop with Bureau guidance and assistance, plans for conservation of water. Most districts in Montana have submitted required plans for Bureau approval.
4. The Recreation Management Program has been used for stabilization of lands in areas developed for recreation. An example would be stabilization of the marina area at Tiber Reservoir.
5. The LRM Program is also used for management of vehicular uses, both on and off-road, on reservoir lands. Closing of roads and areas for off-road vehicular use depends on policy guidelines and available funding.
6. The Rehabilitation and Betterment (R&B) Program provides loans and engineering design assistance for rebuilding, and replacement of antiquated features of irrigation projects. This provides better management, utilization, and conservation of water applied to irrigated croplands. Funding from this program has been used on the Greenfields District of the Sun River Project and are being used for R&B design on Malta and Glasgow projects.
7. Reclamation is participating in the Department of the Interior irrigation return flow water quality study, which will provide background data concerning nutrients, pesticides, and toxic metals, primarily selenium and arsenic in irrigation return flows.
8. The Bureau provides funds for basic data collection at many of the USGS gaging stations and associated water quality monitoring activities in Montana.
9. At the state's request, the Bureau can provide technical assistance in identifying problems associated with irrigation projects. The Bureau is negotiating a technical assistance request to evaluate the ability of lands at the Lower Yellowstone Project to sustain

irrigation. They are also negotiating with the state on a study of water shortage problems in the Musselshell River Basin. This program may be available to assist in establishing BMPs on irrigation projects.

Environmental Protection Agency. The Environmental Protection Agency provides financial assistance to states for activities related to nonpoint source pollution control under several sections of the Clean Water Act (CWA). Under Section 319 of the CWA, financial assistance can be provided to states for implementation of State Nonpoint Source Pollution Management Programs. Section 319 asks that states prepare a comprehensive statewide nonpoint pollution assessment report and a management program.

Upon approval of the assessment report and management program, states are eligible for Section 319 grants from EPA to assist in implementing the management program. The federal share of implementation grants shall not exceed 60 percent. Eligible implementation costs include costs of implementing regulatory or non-regulatory programs for enforcement, technical assistance, financial assistance, education, training, technology transfer and demonstration projects. Monitoring which is done to support design of watershed level control programs or to evaluate a particular implementation project is eligible. General assessment and planning activities as well as administrative costs are not considered implementation. Grants may also be provided for protecting ground water quality with the maximum federal share set at 50%.

An authorization of $400 million for federal fiscal years 1988, 1989, 1990 and 1991 was provided for Section 319 implementation grants. Funds, however, were not appropriated by Congress in FFY 1988 or 1989. The FFY90 appropriation for Section 319 was $38.6 million. EPA has been directed to give priority in making 319 implementation grants to nonpoint projects which will control particularly difficult nonpoint source problems, implement innovative control methods or practices, control interstate nonpoint source pollution, or carry out ground water quality

protection activities.

3.3.2 State

Renewable Resource Development Program (RRD). Program Assistance: The Renewable Resource Development Program (RRD) was established by the Montana Legislature in 1975. (Authority: Title 90 Chapter 2 M.C.A.). The law states that the purpose of the program is to "develop renewable natural resources that will preserve for the citizens the benefit of the state's natural heritage and to ensure that the quality of existing public resources such as land, air, water, fish, wildlife, and recreational opportunities are not significantly diminished by developments supported by this part." In order to do this, the Renewable Resources Development program may provide funds "for the purchase, lease, or construction of projects for the conservation, management, utilization, development, or preservation of the land, water, fish, wildlife, recreational, and other renewable resources in the state; for the purpose of feasibility and design studies for such projects; for development of plans for the rehabilitation, expansion, or modification of existing projects; and for such other and further similar purposes as the legislature may approve." Only public entities are eligible for RRD program.

The coal severance tax provides funding for the RRD program. Initially the program received 2.5 percent of the half of the coal severance tax revenues not allocated to the constitutional trust fund. This equalled 1.25 percent of the entire coal severance tax. During the 1981 Legislature, the law was changed by S.B. 409. This bill reallocated one-half of the RRD revenues to the new Water Development Program.

In other 1981 Legislation, H.B. 600 earmarked the RRD funds for the following project categories:

15% - for timber stand improvement
40% - for water development
15% - for improvements on agricultural lands
10% - for conservation districts for development of water reservations

20% - for the other projects the department considers important

During the 1983 Legislature, H.B. 486 allocated 15% of the RRD funds from the last category called "Other" to the "Rangeland Resource Loan Program" until 1989. After funding this program, five percent of the funding for the "other" category remains.

Program administration and project review procedures: The Montana Department of Natural Resources and Conservation administers the RRD program with procedures similar to those used for the Water Development Program. The Department develops application forms and solicits applications for the program. These are submitted to DNRC in the even-numbered year prior to the beginning of the Montana Legislative session. The application must include information to enable technical, environmental, economic, and financial feasibility assessments.

The Department evaluates the proposals, and also solicits technical and financial review assistance from other entities with appropriate expertise such as local, state and federal agencies, and universities.

After the project proposals are reviewed, DNRC ranks feasible projects and makes a funding recommendation for each proposal. The recommendations are presented to the Water Development Advisory Council for its consideration. Recommendations are then made to the governor who in turn makes his recommendation to the legislature, which makes a final funding decision.

Next, DNRC negotiates contracts with the project sponsors for project implementation. The 40% of RRD funds earmarked for water is administered as part of the water development program. Like water development contracts, RRD contracts include a detailed scope of work defining work to be accomplished, the completion schedule, and project budget. Disbursement of funds is coordinated with the project schedule and budget as funds are available. Contract agreements also call for quarterly and final reports, which are used in conjunction with field visits to monitor project progress and completion.

Water Development Program. The Water Development Program was established in 1981 by the Montana Legislature to promote and advance the beneficial use of water, and to allow the citizens of Montana to achieve full use of the state's water by providing grant and loan financing for water development projects and activities. Projects and activities must be water-related and may be for feasibility work, demonstration projects or construction projects. Eligible proposals include rehabilitation of irrigation projects, dam or reservoir construction, control programs for saline seep, groundwater investigations, development of water-based recreation facilities, streambank stabilization and other erosion control programs, development of water supply, water treatment, or rural water systems, and development of gravity sprinkler irrigation systems. Public entities and private individuals, partnerships, and corporations are eligible to apply.

The funding source for the water development grant program is the coal severance tax. The program receives .625 percent of the gross proceeds of tax and resource indemnity trust interest income each biennium. These funds are disbursed as they are received to approved projects based on their priority ranking. Loans for water development are available to projects with repayment capacity from the proceeds of Montana Water Development General Obligation Bonds. Loans are offered at the interest rate at which the state bond is sold. In 1984 that rate was 8.71 percent, and 1985 rates were 7.22 percent and 6.92 percent.

The Resource Development Bureau of the Conservation and Resource Development Division in the Department of Natural Resources and Conservation (DNRC) administers the Water Development Program. The DNRC develops the application form and solicits proposals from the agricultural community, local governments, irrigation and conservation districts, state government, and the university system. All grant applications and loan applications from public entities are submitted to the DNRC in the even-numbered years prior to each legislative session. Each proposal must include information to enable technical, economic, financial,

and environmental assessments. The Department evaluates the proposals and solicits technical and financial review assistance when appropriate. Following the assessment review, feasible projects and activities are ranked by the Department using established program and financial need criteria. A funding priority and amount recommendation is then prepared for consideration by the Water Development Advisory Council appointed each biennium by the governor in accordance with Section 2-15-22, MCA. After the Council's review, the Department makes a recommendation to the governor, who in turn makes the final recommendation to the legislature. Legislative approval is required for all grants and for all loans to public entities.

Loans to private individuals, partnerships, and corporations may be approved by the Department Director and application may be made throughout the biennium. Applicants are provided application forms, and proposals are reviewed for technical and financial feasibility. Funding of funds for approved projects is contingent on the availability of state bond proceeds. The Department plans a state bond sale each year to make funds available for private loans on an annual basis.

Reclamation Development Grant Program. During the 1985 Legislature the governor proposed that the legislature create a "Legacy Program" to compensate the people of Montana for damages caused by resource extraction (S.B. 277). The program was to do this by investing interest income from the resource indemnity trust tax on extracted minerals for a variety of projects that would benefit the public. The Legacy Program specified a number of purposes, including mine reclamation, mitigation for mineral extraction, natural resource development, conservation, and research on mineral development impacts.

At the request of other parties, a similar bill (H.B. 913) was also introduced. Entitled the "Montana Mineral Legacy Act" it proposed to fund four major natural resource programs intended to promote mineral reclamation and research projects, the development of water, the development of renewable resources, and hazardous

waste management.

Neither bill was passed. Nevertheless, the 1985 Legislature did act on proposed projects for reclamation or renewable resource development which had been reviewed and prioritized by the Department of Natural Resources and Conservation. These projects would have been funded under the Legacy Program had the enabling legislation passed. Rather than either of the aforementioned bills, the legislature chose to enact H.B. 922, appropriations bill, which authorized $4,198,476 for 22 projects. H.B. 922 also established the Environmental Contingency Account to be used for emergencies and to be controlled by the Office of the Governor.

In June 1986, the special session of the Montana Legislature directed the Montana Department of Natural Resources and Conservation to solicit, evaluate, and rank a second round of Reclamation Development grant applications. The eligibility criteria established for formulating project recommendations for the legislature are as follows:

1. Provide mined land reclamation;
2. Provide reclamation for past oil and gas extraction, exploration, and processing;
3. Provide for mitigation of damages to public resources including but not limited to reforestation of areas damaged by mining or smelting activities or mitigation of social and economic impacts on non-renewable resources development;
4. Provide recreational areas or natural areas to compensate for loss or anticipated loss of recreation or natural areas because of resource extraction;
5. Provide for research, demonstration, and technical assistance to promote the wise use of Montana's non-renewable resources including but not limited to efforts to make processing more environmentally compatible; provide for research to assess past or potential environmental damage resulting from non-renewable resource development;

6. Provide investigation and remediation of sites when hazardous and toxic wastes threaten the environment and when funding either from responsible parties or the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 is unavailable; and
7. Provide for natural resource planning or management for a specific geographical area such as basin-wide or county-wide.

In preparation for 1987 Legislature, the Governor's Office worked with several interests in developing proposed new Reclamation Development enabling legislation. This legislation, which was introduced by the Governor, incorporates aspects of both S.B. 277 and H.B. 913 that were introduced in 1985, and resulted in passage of the Reclamation and Development Grants Program (RDGP).

The RDGP was developed to provide the state with capability to fund projects that indemnify the people of the state for the effects of mineral development on public resources and that meet other crucial needs serving the public interest and the total environment of the citizens of Montana. The purposes of the program are to:

1. Repair, reclaim, and mitigate environmental damage to public resources for nonrenewable resource extraction; and
2. Develop and ensure the quality of public resources for the benefit of all citizens.

Entities eligible to apply for grants under the program include any department, agency, board, commission, or other division of state government or any city, county, or other political subdivision or tribal government within the state.

To be eligible for funding under the program, the proposed project must provide benefits in one or more of the following categories:

1. Reclamation of land, water, or other resources adversely affected by mineral development;

2. Mitigation of damage to public resources caused by mineral development;
3. Research, demonstration, or technical assistance to promote the wise use of Montana minerals, including efforts to make processing more environmentally compatible;
4. Investigation and remediation of sites where hazardous wastes or regulated substances threaten public health or the environment; and
5. Research to assess existing or potential environmental damage resulting from mineral development.

If sufficient eligible and qualified applications satisfying the mineral development objectives are not received or if there is a crucial state need, the Department may evaluate and the governor may recommend that the legislature approve funding for projects that:

1. Enhance Montana's economy through the development of natural resources; or
2. Develop, promote, protect, or further Montana's total environment and public interest, including the general health, safety, welfare, and public resources of Montana citizens and communities.

To be eligible for funding under the reclamation and development grants program, a project must:

1. Be technically and financially feasible;
2. Be the best cost-effective alternative to address a problem or attain an objective;
3. Comply with statutory and regulatory standards protecting environmental quality; and
4. Be from an applicant able and willing to enter into a contract with the Department for the implementation of the proposed project or activity.

A project is not eligible for funding under the reclamation and development grants program to the extent that the project is eligible for and can reasonably be expected to receive funding from

other state or federal reclamation programs or any other program or act that provides funding to accomplish remedial action for environmental damage or if the project is permitted under other state mineral reclamation or oil and gas program.

A proposed project is not eligible for funding under the reclamation and development grants program if there is a liable party who would be relieved of financial or legal responsibility and who can reasonably be expected to be held responsible.

Conservation District Project Grant Program - HB 223. The Conservation District Project Grant Program (HB 223) was established by the 47th Legislature in 1981 under Title 15, Chapter 35, Section 108 (3)(h), MCA. One-half of one percent of the coal severance tax funds are available to conservation districts for special projects. Grant funds are available on the basis of need for any purpose authorized by conservation district law - 76-15-4, MCA. To receive funds districts must be able to show the need for additional funds beyond those available through statutory authority (county mill levies). The project or purpose of the project must show a public benefit as well as a soil and water conservation benefit. Grant funds can be used for planning, feasibility studies, demonstration of conservation techniques, or construction of projects. Districts can also use the funds for grants or loans so long as they advance the purpose of conservation district programs.

The HB 223 program is administered by the Conservation Districts Division of the Montana Department of Natural Resources and Conservation (DNRC). The Department develops application forms and solicits applications, which are submitted to DNRC quarterly. Applications must include information to enable technical, environmental, economic, and financial feasibility assessments as well as county commissioner verification that the district has levied the full 1.5 mills allowed by law.

Project proposals are reviewed by the Department and ranked by the Resource Conservation Advisory Council. Recommendations are then made to the Director of DNRC who makes the final funding

decision. The DNRC then negotiates contracts with the conservation district for project implementation. HB 223 contracts include a detailed scope of work defining work to be accomplished, completion schedule, and project budget. Disbursement of funds is coordinated with the project schedule and budget as funds are available. Contract agreements also call for quarterly and final reports, which are used in conjunction with field visits to monitor project progress and completion.

Riparian Management Grant Program. The Riparian Management Grant Program was established in 1985 to provide grants to conservation districts for demonstration projects to improve riparian areas within the state. Funding for the program was derived from the Renewable Resource Development Program (RRD). Grant funds are available to conservation districts who have agreed to sponsor projects that will demonstrate primarily non-structural riparian management/improvement techniques including tree revetments, log cribbing, log deflectors, vegetative planting, modified grazing systems or methods as alternatives to more costly structural techniques such as rock riprap. Landowners must contribute funding or in-kind services to the project.

The program is administered by the Conservation Districts Bureau, Department of Natural Resources and Conservation (CDB/DNRC). The Department develops application forms and solicits applications which must include engineering design, project budget, and information regarding the anticipated water quality and land use improvements of the proposal. The criteria for selection of projects are:

1. Project provides public benefit;
2. Project will improve riparian conditions, reduce erosion, and improve water quality;
3. Landowner cost-share will be provided;
4. Potential for statewide application;
5. Promotes conservation-conservation benefit;
6. Project utilizes primarily non-structural protection or management practices;

7. CD will use as a demonstration site;
8. Need and urgency of project;
9. Long-term benefits of project; and
10. Project has not previously received funds.

Project proposals are reviewed by Department staff. The Administrator of the Conservation Districts Division makes the final funding decision. CCB/DNRC negotiates contracts with conservation districts for project implementation. Contract agreements call for quarterly and final reports, which are used in conjunction with field reviews to monitor project progress and completion.

Streambank Reclamation Grant Program. The Streambank Reclamation Grant Program was established in 1987 to provide grants to conservation districts for implementation of demonstration projects to reclaim streambank areas damaged by past mining activities. Funding for the program was derived from the Resource Indemnity Trust (RIT) Grant Program. Funds are available to districts who sponsor projects to demonstrate techniques for reclamation of streambank areas including vegetation trials, and erosion control measures.

The program is administered by the Conservation Districts Bureau, Department of Natural Resources and Conservation (CDB/DNRC). The Department develops application forms and solicits applications. Applications must include project budget, engineering design, and information regarding anticipated improvements to water quality and land use. The criteria for selection of projects are:

1. Project will reclaim area damaged by past mining activity, improve riparian conditions, reduce erosion, and improve water quality;
2. Project will provide public benefit;
3. Project will be used by CD for demonstration site;
4. Project will promote resource conservation and improvement;

5. Project measures and improvements will have potential for application on similar projects elsewhere in state;
6. Project will utilize primarily nonstructural protection or management practices (i.e., revegetation, sloping, etc.);
7. The need and urgency for completing the project will be considered;
8. The long-term benefits of the project will be considered;
9. Funding from other sources will be considered. Applicants will be encouraged to secure additional funding; and
10. CD will secure an agreement with landowner of project site specifying that landowner will allow use of site for tours to demonstrate benefits of reclamation project and that landowner will be responsible for maintenance of project.

Rangeland Improvement Loan Program. The Rangeland Improvement Loan Program, an important part of the entire Rangeland Resource Program, was established to provide low-interest loans to Montana farmers and ranchers for rangeland development and improvement including stockwater development cross fencing, establishment of grazing systems, reseeding, mechanical renovation, sagebrush management, and weed control.

Initial funding for the program was established by the 1979 Legislature. The program received $300,000 from the Renewable Resource Development (RRD) fund to finance loans for the next biennium. The 1981 Legislature appropriated an additional $350,000 to continue the program.

In 1983, House Bill 486 was passed by the legislature, providing an earmarked account for the loan program. The account will receive additional RRD funds up to June 30, 1989, to continue the program. This legislation also established a "revolving" account whereby all repayments on outstanding loans go back into the loan fund to be used for future loans. Over one million

dollars will be in the revolving account by 1990.

The Rangeland Resource Executive Committee recommends an interest rate for the loans, and DNRC sets the rate by July 1 of each year. The rate is based on the annual inflation rate, the interest rate charged by conventional lenders, and the economic condition of the agriculture industry. The interest rate is set to ensure sustained funding in the loan account. The 1988 rate is 4 percent; however, this rate may fluctuate from year to year.

A loan applicant applies directly to the local conservation district, where the application, along with a conservation plan, is reviewed by the board of supervisors. If the application receives favorable review, it is forwarded to the Conservation Districts Bureau, DNRC. The application is then reviewed by the program coordinator and Rangeland Resource Executive Committee. Those applications approved by the Executive Committee are referred to the director of DNRC for final approval.

The maximum loan is $20,000. Loans are secured by either a first or second mortgage, and preference is given to the applicant who has additional funding available. Loan repayment can be spread over a maximum of ten years. The applicant is required to pay all loan costs, such as title insurance, appraisal fee, and recording fees. The loans are limited to residents of Montana who are engaged in the farming/ranching business and show the necessary expertise to make a rangeland loan practical.

River Restoration Program. The 1989 Legislature passed the "River Restoration Program." Funded by an added charge on fishing licenses, this program is expected to generate $120,000 to $130,000 per year to help preserve and restore aquatic habitat in rivers and streams for recreational and economic importance to Montana. Administered by the Department of Fish Wildlife and Parks, eligible projects will restore streambeds, banks and associated adjacent lands to conserve and enhance fish and wildlife habitat. The program may pay up to 100% of the total project cost.

3.4 Roles of Agencies/Technical Assistance

3.4.1 Federal

Soil Conservation Service. The SCS provides technical assistance for the Farm Security Act, the Great Plains, the PL-566 small watershed and the RC&D programs as explained previously in the financial assistance section of this document. Additional technical assistance is provided through several other programs.

The Soil Conservation Service (SCS) of the USDA provides technical assistance to landowners and users throughout Montana without charge through their conservation assistance program. In this program, the SCS determines where conservation practices are necessary, prepares conservation plans, designs specific practices and supervises and certifies proper installation. They have professional staff expertise in the following resource areas: range, plant science, agronomy, biology, forestry, soils, water resources, hydrology and environmental, civil, agricultural and hydraulic engineering. The BMPs for agriculture were selected from the Montana SCS standards and specifications for conservation practices.

The SCS operates a Plant Materials Center in Bridger, Montana with primary emphasis on developing new plants for conservation purposes. Many of these materials can be used for mine land reclamation and stabilization of critically eroding areas which can impact water quality.

The SCS has the lead role in completing soil surveys on all nonfederal land in Montana. This information includes erosiveness of soils, percolation and infiltration rates and many other parameters that help managers plan appropriate BMPs that protect water quality.

Snow survey is another program that has potential water quality benefits. The prediction of flooding and streamflow potentials is useful in managing water levels in reservoirs to minimize flooding damages and matching crops to expected irrigation water availability. Snow course information has also yielded useful background information for pH studies.

The Cooperative Extension Service (CES). The CES is part of a three-way partnership consisting of federal, state, and county. The CES at the USDA level provides support for State Cooperative Extension organizations by overseeing the distribution of federal funds, by reviewing programs, and alerting states about federal priorities and programs.

CES is the educational arm of the Department of Agriculture with offices in most of the counties in the nation. At the county level, extension agents provide education information, materials, publications, and advice in the major areas of agricultural production and natural resources.

CES involvement in the national Non-Point Source (NPS) effort focuses on information and education programs that develop awareness of (1) the nature, scope, and impacts of NPS pollution, (2) the need to employ best management practices to reduce NPS pollutant inputs to surface and groundwaters and (3) the mechanisms to integrate such best management practices into the production systems.

U.S. Forest Service/Bureau of Land Management. The U.S. Forest Service and Bureau of Land Management operate under authority of numerous watershed management laws, executive orders and administrative regulations. Some legislation provides broad authority while others deal with specific watershed activities and functions pertinent to federal lands.

Responsibility, criteria and procedures for protecting water quality and implementing Best Management Practices are established to provide good land stewardship. Interaction by the agencies with adjacent landowners and lessees has also been beneficial in applying BMPs to protect water quality and promote resource productivity.

3.4.2 State and Local.

Department of Health and Environmental Sciences - Water Quality Bureau. The policy and purpose of the Water Quality Bureau is: (1) to conserve water by protecting, maintaining, and improving the

quality and potability of water for public water supplies, wildlife, fish and aquatic life, agriculture, industry, recreation, and other beneficial uses; (2) to provide a comprehensive program for the prevention, abatement, and control of water pollution.

The enactment of section 319 of the Federal Clean Water Act designates WQB as the lead agency to develop and promote the nonpoint source pollution plan.

A state NPS Assessment Report describing the state's NPS problems and a state NPS Management Plan are the two major documents required by the federal guidelines. Along with the report requirements, WQB will coordinate and encourage other state and federal agencies to participate in the NPS program.

The WQB will continue technical and financial assistance programs such as performing streambank inventories, development of new soil and water conservation practices, riparian improvement efforts and other programs designed to reduce non-point source pollution.

Montana Salinity Control Association. A major nonpoint source pollution problem in Montana is related to agriculturally caused saline seep. Degradation of surface and ground water quality and loss of productive land has resulted. While there are salinity problems associated with irrigation, in Montana the main cause of salinity is attributed to the dryland crop-fallow farming practices employed by the majority of producers. Salinization of shallow ground water has occurred over much of the Northern Great Plains (NGP) during the past 40 years. In the NGP (including Canada), production from over 3 million acres of cropland is lost due to recently developed saline seeps. In Montana in 1987, approximately 300,000 acres are saline affected with the acreage having grown from 140,000 acres in 1974. Saline seeps can increase in size an average of 10% per year if reclamation efforts are not implemented. The salinity hazard of the ground water in the saline seep or discharge areas will range from 3,000 to 70,000 mg/l total dissolved solids, depending on the underlying geology.

Saline seeps can be reclaimed through intensified crop water

use in upslope recharge areas. This allows for a return to production of salinized areas, which reduces soil erosion and results in improved surface water quality along ephemeral drainages at the sites. Seep abatement is a long-term management objective, and improved ground water quality may only be realized over several decades. The nature of this problem requires a long-term program for effective action and education.

The Montana Salinity Control Association (MSCA) was formed to promote saline seep reclamation and implement reclamation practices on a site specific basis. MSCA began working initially in 1979 with ten conservation districts and has expanded to include districts in 33 eastern Montana counties. A multi-disciplinary technical field team located in Conrad, Montana works with landowners to determine the cause of the saline seep and develop recommendations specific to each. To date, 267 reclamation plans have been developed on over 8,500 acres of saline-affected areas. Cropping systems changes have been planned on 55,000 acres of recharge area that are contributing to or causing the saline seeps. MSCA is in the process of working with 20 additional cooperators with over 450 acres lost to salinity.

The technical assistance from MSCA is on a voluntary basis, and landowners are required to pay for a portion of the cost to develop the reclamation plans. Individuals apply for assistance through their local conservation districts. MSCA is involved in an education program to increase public awareness of the salinity problem, with the impact being economic due to lost land production, and a danger to health due to water quality degradation. MSCA works individually with groups and with the public at large to educate them on the process of salinization and the principles behind reclamation.

Department of Natural Resources and Conservation - Conservation Districts Bureau. The Conservation Districts Bureau - (CDB is responsible under state law (76-15-101 through 810, MCA.) to assist and supervise Montana's 59 conservation districts and 30 state grazing districts. The primary function of the CDB is to

provide program assistance to districts which includes:

1. Providing financial assistance to districts for administration and special projects;
2. Coordinating district programs and activities;
3. Providing guidance and counsel in the areas of personnel matters, district administration, financial affairs, legal affairs, sources of financial assistance;
4. Establish conservation-education programs;
5. Administration of the Montana Rangeland Resource Program;
6. Provide technical assistance with projects such as streambank inventories, riparian management techniques and other problems dealing with soil erosion, water quality assessment and improvements, rangeland improvement, timber management, land use regulations, mining impacts and weed control;
7. Provide assistance in the development and implementation of agricultural water reservations;
8. Represent the conservation districts, the Department and the state in land use planning decisions and coordinated resource management and planning; and
9. Provide training for district employees and supervisors.

The CDB will continue to be involved in water quality management programs in Montana. Under Section 319, the Bureau will assist the Water Quality Bureau, Department of Health and Environmental Sciences in the development of the assessment report and management program and in program implementation with particular emphasis on the agriculture category. The CDB has made application to public and private grant sources to provide funding for 319 program implementation. Further, bureau personnel have agreed to develop a water quality education program aimed at conservation district personnel and other members of the agriculture community. This program will be available for statewide distribution upon completion.

The bureau will coordinate all water quality management activities with the Water Quality Bureau, and with conservation

districts who have been designated in Montana as the local entities responsible for nonpoint source pollution control programs. The bureau will be responsible for the dissemination of program information to all districts, and work with selected districts on implementing programs and projects to address nonpoint source pollution.

Department of Natural Resource and Conservation - Water Resources Division. The Water Resources Division consists of three bureaus including the engineering bureau, water management bureau and the water rights bureau. The primary function of the division is to provide assistance to the public in the areas of water resource management including:

1. Floodplain management activities;
2. State-owned project development and rehabilitation including state-owned dams;
3. Administration of the dam safety program;
4. Water planning activities;
5. Development of a state water management plan;
6. Regulation of new water rights and adjudication of existing rights;
7. Regulation of water well contractors;
8. Providing technical and engineering assistance in the development of water projects; and

Resource Development Bureau (under Conservation and Resources Division (DNRC) the bureau has provided financial assistance in the past for water quality programs. Under Section 319, the division's primary involvement will be in reviewing grant applications for program implementation funds and providing funds to sponsors of approved projects through the Renewable Resource Development, Water Development and Reclamation and Development grant programs. These programs will be utilized as one of the primary sources for state or private match to federal funding available under the nonpoint source pollution control program.

1. Administration of loan and grant programs including the Renewable Resource Development, Water Development and

Reclamation and Development Grant programs;

2. Providing financial and technical assistance to conservation districts in the development and implementation of agricultural water reservations.

Department of State Lands - Division of Forestry. The mission of the Forestry program is to provide trust land management, wildfire suppression and forestry assistance. Management of state forest lands focuses on sustained and improved natural resource benefits for the school trust. Through various programs, a healthy, diverse wood products industry is promoted, forest lands are protected from detrimental effects of fire, insect pests and diseases, and technical assistance for private forest landowners is available. The Division has also played a key role in watershed issues including acting as the lead agency in the Cumulative Watershed Effects Cooperative discussed in the silvicultural section of Chapter 2.

Approximately 5 million acres is administered by the Department of State Lands, of which 586,000 acres are commercial forest land. Management focuses on maximizing forest products, growing timber and watershed protection.

Technical assistance, practical forest management advice and incentive programs are available to private landowners. Authorization for programs pertain to forest, range, water and soil conservation. In addition, primary wood processors receive assistance to improve harvest, wood manufacturing and marketing. The administration of the State Hazard Reduction or Management Law provides for timely reduction of fire hazards created by logging, timber stand improvement and right-of-way clearing on private lands. Industrial and federal forest land managers have similar cooperative programs.

A description of the Forestry Program is available from the Department of State Lands.

Abandoned Mine Reclamation Lands Bureau (AMRB). The AMRB provides technical assessments on bid packages, grant proposals and individual mine reclamation projects. Generally, assessments are

provided to other agencies cooperating in the mine reclamation program including the Resource Development Bureau, Department of State Lands, Department of Fish, Wildlife and Parks, Department of Health and Environmental Sciences, Water Quality Bureau and Solid and Hazardous Waste Bureau, U.S. Forest Service and Bureau of Land Management. Most grant proposals are requesting reclamation funding through the Reclamation and Development Grant Program (RDGP) or Office of Surface Mining (OSM) for reclamation purposes.

Coal and Uranium Bureau (CUB). The CUB administers a Small Operators Assistance Program (SOAP). This program provides hydrologic evaluations and data to qualifying operators. The CUB has regulatory and administrative authority over all coal and uranium mining, remining and preparation in the state. Under the direction of the Surface and Underground Mining Act, Title 82, Chapter 4, 1973, the staff of the CUB reviews permit applications for development of mining operations. The CUB works closely with the federal Office of Surface Mining.

Special regulations apply to reclamation of mining operations in alluvial valley floor determinations where "essential hydrologic functions" (aquifers) are required to be reestablished. In areas other than alluvial valleys, the hydrologic balance is required to be protected.

A performance bond is required in an amount pursuant to the cost to the state to return disturbed land to prior utility and productivity. Stringent regulations include the ability to issue noncompliance citations in the field.

Hard Rock Bureau (HRB). HRB's general responsibilities focus on administration of the Metal Mine Reclamation Act which regulates exploration, operation and reclamation of hard rock mines. Technical evaluations are conducted on virtually every mine in the state to determine the impact of the project on the general welfare, health, safety, ecology and property rights of citizens of the state.

Diverse evaluations are conducted in conjunction with other agencies or parties on exploration programs, small mines and major

projects as dictated in the aforementioned act. Operational and reclamation specifications are significantly different according to the mineral and methods for extraction.

While realizing that practically all mineral extraction disturbs the surface or subsurface of the land, and that the character of many mining operations precludes complete restoration, the HRB is mandated to provide for reclamation of mined lands to prior usefulness, productivity and scenic values within the reasonable jurisdiction and intent of the law (ref: MCA 82-4-302). A performance bond is required for exploration projects and mines requiring operating permits based on the estimated cost to the state to complete reclamation of the disturbed land.

Small miners may be subject to other agency regulations which ensure performance similar to major operators (ref: 82-4-303, (11)). The federal government, Montana Department of Health and Environmental Sciences and local conservation districts play a role in permitting operations not regulated by the Metal Mine Reclamation Act. Technical assistance is provided to operators in this category similarly and in cooperation with the HRB.

Open Cut Bureau (OCB). The OCB's general responsibilities focus on extraction of sand and gravel, bentonite, clay, phosphate and scoria. Most OCB projects involve private contractors that request technical assistance for securing local conservation district permits ("310") to protect stream bank and bed integrity or dewatering (MPDES) permits from the Water Quality Bureau.

Reclamation of open cut mines is required as specified in the Open Cut Mining Act, Title 82, Chapter 4, Part 4, to reclaim project lands to prior usefulness, productivity and scenic values within the reasonable jurisdiction and intent of the law. A performance bond is required based on estimated cost to the state to reclaim the disturbed land.

Department of Agriculture. The Department of Agriculture has been involved with several activities that provide technical support for the management of nonpoint sources of water pollution.

The Technical Services Bureau provides training to commercial pesticide applicators and assists with private applicator training. Topics that are frequently covered are proper calibration of application equipment, drift reduction, integrated pest management, and ground water contamination problems.

The Technical Services Bureau has also conducted surveys of potential contamination of ground water by pesticides resulting from agricultural use. They have used a "hot spots" approach to sample areas with irrigation, high pesticide use, permeable soils and high water tables. Pesticides detected in ground water from these surveys are aldicarb residues, 2 4-D, dicamba, MCPA, and picloram. Last year the Sidney area was sampled, and next year into northeastern Montana, the areas west of Havre and the area near Glendive will be sampled. Eventually, all vulnerable areas in the state will be sampled to obtain baseline information about ground water contamination by pesticides.

The Field Services Bureau has collected ground water samples during inspections of some airports and weed district shops. Pesticides that have been detected in some of these samples are bromacil, 2,4-d, dicamba, endrin, MCPA, and picloram. The Field Services Bureau also investigates complaints including misuse of pesticides, improper storage or disposal, drift to adjacent fields or surface water, and ground water contamination.

The Laboratory Services Bureau analyzes ground water, surface water, soil, sediment, vegetation, etc. for pesticide residues. Most of this analytical work results from damage complaints or environmental sampling programs.

Finally, the Environmental Management Division has been involved with a large scale research project to determine the environmental fate of pesticides applied under field conditions in Montana. In this study, soil, vegetation, sediment, water, and invertebrate samples were gathered and analyzed periodically from treated and untreated fields, field margins, and adjacent ponds.

Conservation Districts. There are 59 conservation districts in Montana. The districts are legal subdivisions of state

government responsible under statute for soil and water conservation activities within their boundaries. Districts develop and carry out long-range programs for conservation and improvement of soil and water resources, provide assistance in planning and application of conservation measures, and encourage maximum participation of the general public and all local public and private agencies to fulfill this purpose. Conservation districts represent about 15,000 cooperators totaling around 44 million of the 61 million acres of private lands in the state. These numbers are increasing significantly because of the Food Security Act and other responsibilities placed on districts.

Conservation districts are the designated local management agency for nonpoint source pollution control programs in Montana. The districts have been involved in water quality improvement programs for many years. Under the earlier Section 208 program, for example, districts were instrumental in statewide nonpoint source assessment, in public education and in development of local plans for nonpoint source pollution control as well as the statewide 208 plan.

Districts will again play a vital role in the state NPS program proposed under Section 319. They will provide guidance and assistance in implementation of selected BMPs by district cooperators; they will sponsor projects on selected watersheds, and will cooperate in a water quality education program to decrease agricultural nonpoint source pollution.

Several districts have expressed interest in developing local NPS control programs on selected streams or watersheds within their boundaries, in addition to the initial activities proposed under the state 319 programs. These local programs will be administered by the districts with cooperation and guidance from the Conservation Districts Bureau of DNRC and the Water Quality Bureau of DHES. These districts plan to apply for grant funding for program implementation from the DNRC. These programs may later be incorporated into the state program as federal funding becomes available.

Department of Fish, Wildlife and Parks. The major contribution of the Montana Department of Fish, Wildlife and Parks (MDFWP) to the non-point pollution program is in the areas of hydraulic permitting and information and education. MDFWP spends approximately $300,000 per year to administer stream protection laws designed to reduce erosion and preserve fish habitat. In addition to permitting, MDFWP provides funding and technical assistance to local agencies and organizations to design and construct demonstration streambank stabilization projects. Total funding for these projects varies from year to year. Funding is also provided to local conservation districts to host seminars dealing with stream mechanics. The seminars are designed to inform landowners and local government authorities of reasonable alternatives in stream management.

Montana Department of Highways. Montana Department of Highways is currently revising its standards and specifications regarding erosion control activities and requirements on construction projects. A multi-disciplinary Erosion Control Task Force has been assigned the task of developing specific guidance for implementation of onsite measures, both temporary and permanent. Temporary measures are designed to control runoff of sediment during construction. Permanent measures are designed to control sediment runoff both during and subsequent to completion of construction. Standard specifications for erosion and water pollution control, Sections 15 and 50, MDOH Standard Specifications for Road and Bridge Construction, are being reviewed by the Task Force. New standard drawings showing typical temporary erosion control installations have been developed and are being added to project contract plans where needed.

Permanent erosion control features are being incorporated into project plans to minimize sediment runoff and improve maintainability over the life of the project. These include sediment detention basins, ditch checks, lined diversion ditches and berms, and revegetation.

4. PUBLIC PARTICIPATION

The DHES criteria for the Assessment Report and Management Plan required both of these documents to meet the legislated requirements of all national and state laws and reflect the desires and wishes of Montana citizens. Draft documents were developed and distributed by DHES, DNRC and EPA. The DHES in cooperation with the DNRC and EPA set up a series of public meetings, met with interest groups, mailed draft documents throughout the state, initiated task force activities and solicited comments to make certain that the DHES Management Plan and Assessment Report reflected the wishes of Montana's citizens.

A meeting was held on December 17, 1987 in Helena to discuss the requirements of Section 319 of the Clean Water Act. Preliminary nonpoint water quality assessment information and management program ideas of the DHES were provided; public involvement and comments were requested. A checklist was distributed at the meeting to request progress reports and to request involvement in the review process for development of the Assessment Report and the Management Program. Public meetings were held in Miles City on June 22, in Lewistown on June 23, and in Missoula on June 27, 1988 to receive comment on the draft documents.

Throughout the process members of the DHES, DNRC and EPA met with individual Conservation Districts, the Montana Association of Conservation Districts, personnel from the USFS and the BLM as well as from interest groups such as the Montana Chapter of the Soil and Water Conservation Society, EQC, Society of American Foresters, Montana Environmental Information Center, the Montana Water Development Association, Montana Riparian Education Committee, USDA State Administrative Committee and any other group, individual or agency that requested this information.

The draft Management Plan and Assessment Report was mailed to approximately 300 individuals, groups and agencies who either had expressed an interest in these documents or whom the DHES thought would be interested. A cover letter was sent with this mailing, requesting comments and suggestions for improvements either in

writing, or verbally and announcing public meeting dates. A summary of the comments received during this process and the response of the DHES is included in the Appendix. Editorial comments were not included in this summary, but were considered and used in improving the draft copies of these documents.

Representatives of 31 interested agencies, environmental groups, and industrial and trade groups were requested to participate in a statewide NPS Task Force. A copy of the mailing list for this group is enclosed in the Appendix. Task Force meetings were held June 13 and July 14, 1987 in Helena. During the June meeting, members reviewed the 319 process and requirements, the draft Assessment Report and the NPS Management Plan, and the proposed public review and comment process. Verbal and written comments received during the comment period were reviewed at the July meeting and plans were made to finalize both the Assessment Report and NPS Management Plan by the August 4, 1988 deadline. Future NPS task force meetings will be scheduled to help steer midcourse adjustments throughout the four-year program.

A Monitoring Subcommitee of the NPS Task Force was established to help develop recommendations for a monitoring strategy in Montana. Additional activity by other subcommittees is planned to update management plan recommendations for specific categories of pollution. Public comment will be invited to assist with updating the Management Plan.

5. FEDERAL PROGRAM CONSISTENCY WITH NONPOINT MANAGEMENT PLAN

Section 319 of the Clean Water Act asks that states assure that federal assistance programs and development projects be consistent with the state's NPS Pollution Management Program. This requirement does not impose any major new burdens on states or federal agencies. It assures that the process for intergovernmental review of federal programs, established in response to Executive Order (EO) 12372, be utilized by the states to evaluate federal programs and projects for consistency with states' nonpoint source management programs.

An Intergovernmental Review Clearinghouse has been established in the Governor's Office of Budget and Program Planning in response to EO 12372. This clearinghouse issues bimonthly summaries of federal assistance programs, development projects and other federal activities. The WQB-DHES will review this publication and coordinate with the clearinghouse to assure consistency with Montana's Nonpoint Source Pollution Management Plan.

For purposes of this program, federal development projects will be defined as those activities undertaken, authorized or financed by the federal department, agency or instrumentality, including natural resource management or utilization, which may impact land management practices and patterns, and which may cause the disturbance of land or ground cover, including the discharge or runoff of pollutants into adjacent waters which, if uncontrolled or without proper management may have an effect on the attainment or the maintenance of applicable water quality standards. The term shall include the land management activities (including the activities of federal agency tenants, claimants, lessees or contractors) on/at federal installations, facilities and lands.

The State of Montana has begun a dialogue with several federal agencies - SCS, BLM, USFS, ASCS, etc. - to develop a process of identification of development projects that may be reviewed for consistency with the state NPS program. The following is a list of the types of programs and development projects, managed by

federal agencies, that may be reviewed for consistency with the program:

Forest Service

- timber activities
- range activities
- chemicals/pesticides
- area analysis/cumulative impacts analysis
- recreation development
- transportation plans
- watershed management
- water development
- watershed rehabilitation projects
- public water supply watershed management
- hydrologic modification
- wetlands protection
- fisheries programs
- riparian management plans
- minerals exploration and development
- fuels management
- applications for permits to drill
- oil and gas leasing/reclamation plans
- FERC activities/Federal Energy Regulatory Commission
- ORV activities/off-road vehicles
- D-J/W-B activities (Dingell-Johnson and Wallop-Breaux - fish and game)

Bureau of Land Management

- watershed projects
- mineral exploration and development
- coal, oil and gas leasing
- coal reclamation
- orv activities
- timber activities
- grazing allotment/grazing management
- chemicals/pesticides
- area analysis/cumulative impacts
- public watershed management
- wetlands protection
- riparian management plans
- hydrologic modification
- transportation plans
- watershed activity plans

Soil Conservation Service/Agricultural Stabilization and Conservation Service

- ACP (Agricultural Conservation Program)
- GPCP (Great Plains Conservation Program)

PL-566 (Small Watersheds)
RCWP (Rural Clean Water Project)
RCWP BMP 15 - Fertilizer Management
RCWP BMP 16 - Pesticide Management
RBS (River Basin Studies)
RC&D (Resource Conservation & Development)

Department of Defense (defense installations)

land management plans
waste management plans
re-vegetation plans

Federal Highway Administration

highway construction/reconstruction

Bureau of Reclamation

irrigation development

Office of Surface Mining/SMRCA

Abandoned Mine Lands Program
mineral development

U.S. Environmental Protection Agency

CERCLA/SARA

The following is a list of the federal assistance programs which may be reviewed for consistency with the Montana NPS Management Plan:

Federal Assistance Programs

A. Agricultural Stabilization and Conservation Service

1.	10.063	Agricultural Conservation Program
2.	10.069	Conservation Reserve Program
3.		Sodbuster
4.		Swampbuster
5.		Conservation Compliance
6.	10.068	Rural Clean Water Program
7.	10.062	Water Bank Program
8.	10.054	Emergency Conservation Program

B. Soil Conservation Service

1.	10.902	Soil and Water Conservation
2.	10.901	Resource Conservation and Development
3.	10.904	Watershed Protection (Small Watershed Program PL-566)
4.	10.906	river basin studies
5.	10.910	Rural Abandoned Mine Program
6.	10.900	Great Plains Conservation Program

C. Extension Service

1.	10.500	Cooperative Extension Service

D. Department of Interior

1.	15.250	Regulations of Surface Coal Mining and Surface Effects of Underground Coal Mining
2.	15.252	Abandoned Mine Reclamation Program
3.	15.503	Small Reclamation Project

E. Environmental Protection Agency

1.	66.600	Environmental Protection Consolidation Grants Program
2.	66.700	Pesticides Enforcement Program
3.	66.435	Clean Lakes Cooperative Agreements
4.	66.418	Constructions Grants for Wastewater Treatment Works
5.	66.433	State Underground Water Source Protection
6.	66.801	Hazardous Waste Management State Program Support
7.	66.804	State Underground Storage Tanks Program
8.		CERCLA/SARA

F. Department of Defense

1. 12.109 Protection, Clearing and Straightening Channels

G. Farmers Home Administration

1. 10.418 Water and Waste Disposal Systems for Rural Communities
2. 10.419 Watershed Protection and Flood Prevention Loans

H. Department of Transportation

1. 20.205 Highway Planning and Construction

6. CERTIFICATION BY ATTORNEY GENERAL

INDEPENDENT COUNSEL STATEMENT

I AUTHORITY TO CERTIFY

This certification is provided to EPA on the authority of the Attorney General of the State of Montana. Section 2-15-501 of the Montana Code Annotated sets forth the general duties of the Attorney General including (subsection 7) the furnishing of opinions to state agencies when required upon any question of law relating to their duties.

In Montana all attorneys for state agencies are appointed Special Assistant Attorneys General. Therefore certifications such as the one herein provided regarding the state's authority to implement the management program are technically opinions of the Attorney General. However, the Special Assistant Attorney General for many agencies, including the Department of Health and Environmental Sciences, functions as Independent Legal Counsel. The official appointment of the Department of Health's Counsel states:

> You are hereby appointed Special Assistant Attorney General for the State of Montana, Department of Health and Environmental Sciences, in all matters requiring legal counsel.

II CERTIFICATION

I hereby certify, pursuant to my authority as Independent Legal Counsel for the Department of Health and Environmental Sciences of the State of Montana and in accordance with Section 319(b)(2)(D) of the 1987 Clean Water Act that, the laws of the State of Montana, as enumerated in the Montana Non-point Source Pollution Management Program, to be forwarded to the E.P.A. under the provisions of Section 319, provide adequate authority to implement the management program contained therein.

DATED this 29th day of July, 1988.

FRANK C. CROWLEY, Special
Assistant Attorney General
Chief Legal Counsel
Montana Department of Health
and Environmental Sciences

7. APPENDICES

Appendix A. Montana Extension Service -- Agricultural Pesticides and Fertelizers

Appendix B. Agricultural Best Management Practices

Appendix C. Forestry Best Management Practices

Appendix D. Nonpoint Source Stream Reach Assessment Overview

Appendix E. Task Force Members

Appendix F. Public Comment and DHES Response

Appendix G. Memorandums of Understanding

APPENDIX A.

The Montana Extension Service has developed an extensive groundwater quality education program which addresses agricultural pesticides and fertilizers.

12/15/88 Publish monthly facts sheets on a variety of water quality topics and distributed statewide (see distribution schedule); 12 issues through 11/15/89 (see attached fact sheet description and publishing schedule MSU EXTENSION.

05/01/89 ongoing Develop a grass roots approach to local water quality protection and education - MSU EXTENSION.

06/01/89 09/30/89 Conduct a statewide private well water sampling and testing program for county agents. Samples will be tested for pH, EC, nitrates, coliform, turbidity, TDS - MSU EXTENSION.

06/01/89 Complete a leaching potential map for Montana for use by SCS, Conservation Districts, and other - MSU EXTENSION.

06/01/89 09/01/89 Incorporate new water quality concepts into youth education programs: Agriculture in Montana Schools' Careers Workshop, Montana Natural Resources Youth Camp, Willow Creek Classic - MSU EXTENSION.

06/01/89 09/01/89 Develop a water quality awareness program for county commissioners in Silver Bow County (Butte) - MSU EXTENSION.

07/01/89 Complete a 30-minute general awareness TV documentary on water quality issues in Montana, to be aired on KUSM - MSU EXTENSION.

08/01/89 Develop 6-8 fifteen-minute general awareness videos, each addressing a different water quality issue with a grant from KUSM - MSU EXTENSION.

09/01/89 Complete two Montguides on nutrient and pesticide leaching - MSU EXTENSION.

10/01/89 Complete a four-part educational package on private well water quality for county agent use; funding currently pending - MSU EXTENSION.

12/01/89 Complete a fertilizer guide and water quality guidelines for all major crops in Montana; funding ending - MSU EXTENSION.

Appendix A. Continued.

12/01/89 Complete a general awareness bulletin on pesticide use, groundwater protection, and BMPs in Montana - MSU EXTENSION.

06/01/90 Develop a water quality curriculum for training county agents and high school science teachers for recertification credit - MSU EXTENSION.

APPENDIX B.

Agricultural Best Management Practices

Contents

Practice name	Code	Agricultural subcategory
Access Road	560	1,2,3
Bedding	310	2,3
Channel vegetation	322	2
Chiseling and subsoiling	324	1,2,3
Clearing and snagging	326	1,2,3,4
Conservation cropping sequence	328	2,3
Conservation tillage	329	2,3
Contour Farming	330	2,3
Cover and green manure crop	340	2,3
Critical area planting	342	1,2,3,4
Crop residue use	344	2,3
Dam, floodwater retarding	402	1,2,3,4
Dike	356	1,2,3,4
Diversion	362	1,2,3,4
Emergency tillage	365	2,3
Farmstead and feedlot windbreak	380	4
Fencing	382	1,2,3,4
Field windbreak	392	2,3
Filter strip	393	2,3
Floodwater diversion	400	1,2,3,4
Floodway	404	1,2,3,4
Grade stabilization structure	410	1,2,3,4
Grassed waterway	412	2,3
Grasses and legumes in rotation	411	2,3
Grazing land mechanical treatment	548	1
Irrigation canal or lateral	320	3
Irrigation field ditch	388	3
Irrigation land leveling	464	3
Irrigation pit or regulating reservoir	552-A-B	3
Irrigation storage reservoir	436	3
Irrigation system		3
Trickle	441	3
Sprinkler	442	3
Surface and subsurface	443	3
Irrigation system, tailwater recovery	447	3
Irrigation water conveyance		
Ditch and canal lining	428-A-C	3
Pipeline	430-AA-II	3
Irrigation water management	449	3
Land smoothing	466	1,2,3,4

. . . Continued

Appendix B. Continued.

Contents

Practice name	Code	Agricultural subcategory
Lined waterway or outlet	468	1,2,3,4
Livestock exclusion	472	1,2,3,4
Mulching	484	2,3,4
Pasture and hayland management	510	1,2,3
Pasture and hayland planting	512	1,2,3
Pipeline	516	1,2,3,4
Planned grazing systems	556	1
Pond	378	1,2
Pond sealing or lining	521-A-E	1,2
Proper grazing use	528	1
Pumped well drain	532	4
Pumping plant for water control	533	3
Range seeding	550	1
Rock barrier	555	1,2,4
Runoff management system	570	4
Sediment basin	350	1,2,3,4
Soil salinity management	573	2
Soil Moisture mgt. for saline seep	Interim	2
Spring development	574	1,2
Streambank and shoreline protection	580	1,2,3,4
Stream channel stabilization	584	1,2,3,4
Stripcropping		
Contour	585	2
Field	586	2
Wind	589	2
Structure for water control	587	1,2,3,4
Stubble mulch	588	2
Subsurface drain	606	2,3,4
Subsurface drainage		
Field ditch	607	3
Main or lateral	608	3
Tall Wheatgrass Barriers	Interim	2
Terrace	600	3
Toxic salt reduction	610	2,3
Trough or tank	614	1, 4
Underground outlet	620	1, 4
Vertical drain	630	2,3
Waste, disposal, on farm		
sanitary landfill	Interim	4
Waste management system	312	4
Waste storage pond	425	4
Waste storage structure	313	4
Waste treatment lagoon	359	4

. . . Continued

Appendix B. Continued.

Contents

Practice name	Code	Agricultural subcategory
Water harvesting catchment	636	1
Water and sediment control basin	638	1,2
Waterspreading	640	1, 3
Well	642	1,2,3,4
Windbreak renovation	650	2

AGRICULTURAL SUBCATEGORIES

1 Rangeland/grazing

2 Dryland

3 Irrigated

4 Feedlots/animal Holding

APPENDIX C.

Forestry Best Management Practices

Activity & practice name	Code
Road activity:	
Planning and location	200
Design	205
Road surface drainage	210
Construction	215
Maintenance	220
Timber harvesting, streamside management and preparation:	
Harvest design	230
Streamside management	235
Harvesting activities	240
Slash treatment and site preparation	245
Stream crossings:	
Designs	250
Installation	255
Winter Logging:	
Road construction and harvesting	260
Hazardous substances	
General	270
Pesticides and herbicides	275

Appendix D.

NONPOINT SOURCE STREAM REACH ASSESSMENT OVERVIEW

INTRODUCTION: NONPOINT SOURCE (NPS) POLLUTION IS HIGHLY DIFFUSE IN NATURE, UNLIKE POINT SOURCE POLLUTION WHICH CAN BE ATTRIBUTED TO A SINGLE POINT. NPS POLLUTION DISCHARGES OCCUR OVER DISPERSED PATHWAYS AND ARE GENERALLY ASSOCIATED WITH PRECIPITATION AND RUNOFF. NPS POLLUTION IS RELATED TO HUMAN LAND USES WHICH ARE CONTROLLABLE. BEST MANAGEMENT PRACTICES (BMP'S) ARE METHODS INCORPORATED WITH LAND USES THAT AVOID OR MINIMIZE IMPACTS TO WATER RESOURCES CAUSED BY NPS POLLUTION.

PURPOSE: THIS ASSESSMENT PROCEDURE IS DESIGNED FOR STATEWIDE USE TO PROVIDE AN INITIAL, STANDARDIZED METHOD TO IDENTIFY NONPOINT SOURCES, APPRAISE BMP APPLICATION AND EFFECTIVENESS AND ASSESS STREAM IMPAIRMENTS THAT HAVE RESULTED FROM NONPOINT SOURCE (NPS) POLLUTION. HYDROLOGIC FACTORS THAT CONTRIBUTE TO IMPAIRMENT OF THE STREAM WILL ALSO BE ASSESSED. THE WATER QUALITY BUREAU (WQB) WILL ASSIGN NUMERICAL RATINGS TO EACH ASSESSMENT PARAMETER WHICH WILL CATEGORIZE STREAMS RELATIVE TO DEGREE OF IMPAIRMENT. STREAMS CATEGORIZED AS SEVERELY IMPAIRED WILL RECEIVE EMPHASIS FOR FUTURE NPS POLLUTION MANAGEMENT. INFORMATION FROM THE ASSESSMENTS AND THE SUBSEQUENT RATINGS WILL PROVIDE A UNIFORM DATA BASE FOR EACH STREAM AND STREAM REACH. THIS DATA BASE WILL BE STORED IN THE MONTANA REACH TRACKING SYSTEM DEVELOPED BY THE WQB. INFORMATION IN THE REACH TRACKING SYSTEM WILL BE AVAILABLE TO INTERESTED INDIVIDUALS.

INSTRUCTIONS: THE ASSESSMENT PROCEDURE WILL BE LIMITED TO SECOND, THIRD AND FOURTH ORDER STREAMS[1]. THE DISTANCE OF EACH STREAM REACH ACTUALLY OBSERVED IS DEPENDENT ON FACTORS SUCH AS TIME OR ACCESSIBILITY. OBVIOUSLY THE BEST ASSESSMENT WOULD INVOLVE WALKING THE ENTIRE STREAM. REALISTICALLY THIS WILL NOT BE POSSIBLE IN MOST SITUATIONS AND IS NOT NECESSARY. AS A GENERAL GUIDE THE SURVEYOR SHOULD CHOOSE THE MOST ACCESSIBLE OBSERVATION POINTS THAT ALLOW ADEQUATE IDENTIFICATION OF IMPAIRMENTS THAT MAY BE OCCURRING IN A REACH. EXAMPLES WOULD BE AT THE STREAM MOUTH, ABOVE AND BELOW HUMAN ACTIVITIES AND BELOW TRIBUTARIES. THE SURVEYOR SHOULD WALK AT LEAST 100' OF THE STREAM AT EACH OBSERVATION POINT OR ENOUGH DISTANCE TO GET A REPRESENTATIVE PICTURE OF THE SITUATION AT THAT POINT. IF POSSIBLE, TRY TO INCORPORATE A RIFFLE, RUN AND POOL AT EACH OBSERVATION POINT.

EACH STREAM WILL CONSIST OF ONE OR MORE REACHES. ONE ASSESSMENT FORM WILL BE COMPLETED FOR EACH REACH. STREAM REACHES WILL BE DETERMINED BY THE SURVEYOR. EACH REACH SHOULD EXHIBIT FAIRLY HOMOGENOUS CONDITIONS. AS A GENERAL RULE REACH BREAKS OCCUR WHERE OBVIOUS CHANGES IN STREAM CONDITION ARE DETECTED. THE SURVEYOR SHOULD BE AWARE OF CHANGES SUCH AS LAND PRACTICES, FLOW, GRADIENT, VEGETATION, VALLEY TOPOGRAPHY AND SUBSTRATE.

CONSIDER THE ENTIRE REACH WHEN RATING PARAMETERS. AVOID CONCENTRATING ON SPECIFIC FEATURES UNLESS THEY ARE A MAJOR PROBLEM. PLEASE RATE ALL PARAMETERS ON THE FORM AND CHOOSE THE DESCRIPTION THAT IS MOST APPLICABLE. DO NOT LEAVE ANY RATING PARAMETERS BLANK. IN CASES WHERE RATING FACTORS DO NOT APPLY RECORD AS N/A; OR IF A PARAMETER RATING IS UNKNOWN RECORD AS SUCH.

TOPOGRAPHIC MAPS AT A MINIMUM AND AERIAL PHOTOS (IF POSSIBLE) SHOULD BE CONSULTED PRIOR TO THE ASSESSMENT TO PICK OUT PROMINENT FEATURES IN THE WATERSHED AND TO SELECT OBSERVATION POINTS. MAPS WITH IDENTIFICATION OF OBSERVATION POINTS, REACH BREAKS, AND ANY IMPORTANT FEATURES SHOULD BE TURNED IN WITH ASSESSMENT FORMS.

ANY OUTSTANDING FEATURES OBSERVED I.E. GROSS SEDIMENT SOURCES, FISH BARRIERS, POINT SOURCE DISCHARGES, ETC. SHOULD BE PHOTOGRAPHED (IF POSSIBLE) AND LABELED ON THE MAP TO BE TURNED IN WITH THE ASSESSMENT FORM.

EQUIPMENT: AT MINIMUM YOU WILL NEED FIELD FORMS AND MAPS TO DO ASSESSMENTS. IT IS SUGGESTED THAT THE SURVEYOR INCLUDE A THERMOMETER IF IRRIGATION RETURNS ARE EXPECTED TO BE ENCOUNTERED, AND A CAMERA TO PHOTOGRAPH ANY NOTABLE FEATURES ALONG THE STREAM.

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[1] FOR DEFINITION OF STREAM ORDER SEE PAGE 1 OF ASSESSMENT FORM UNDER GENERAL INFORMATION.

NONPOINT SOURCE STREAM REACH ASSESSMENT

MONTANA WATER QUALITY BUREAU

FIELD REPORT FORM

GENERAL INFORMATION

STREAM NAME_____ RIVER BASIN[1]_____ COUNTY(S)_____

ASSESSED BY (NAME)_____DEPT./AGENCY/OTHER_____ DATE ASSESSED_____

REACH LEGAL DESCRIPTION T./R./S. 1/4SEC. BEGINNING _____ END_____

REACH NUMBER OR LETTER (ASSIGNED BY SURVEYOR) _____

PLEASE DESCRIBE ANY PROMINENT LANDMARKS THAT MAY DELINEATE REACH BREAKS. _____

_____

DELINIATE ALL REACH BOUNDARIES AND OBSERVATION POINTS ON MAP/S AND ATTACH TO ASSESSMENT FORMS.

LAST RAINFALL DATE AND AMOUNT OR INTENSITY IF KNOWN_____ **WATER TEMPERATURE** _____AT_____AM/PM

FLOW STAGE (RELATIVE TO BANK FULL 100%) ___FLOOD,100+% ___HIGH,75% ___MODERATE,50% ___LOW,<25% ___NO WATER

STREAM DESCRIPTION: CHECK THE ITEM IN EACH COLUMN THAT BEST FITS

GRADIENT	VALLEY SHAPE	CHANNEL PATTERN	CHANNEL EROSION	STREAM TYPE
___>3%	___"V" SHAPED	___SINGLE, STRAIGHT	___VERTICAL EROSION DOMINATES	___ MOUNTAIN
___1-3%	___"U" SHAPED	___SINGLE, SINUOUS	___VERTICAL & HORIZONTAL COMMON	___ TRANSITIONAL
___<1%	___ FLAT	___BRAIDED, STRAIGHT	___HORIZONTAL EROSION DOMINATES	___ PRAIRIE
		___BRAIOED, SINUOUS		

FISHERIES: CHECK THE ITEM THAT BEST FITS

____COLD WATER (TROUT SPECIES ONLY) ____WARM/COOL WATER DOMINATED BY SPECIES SUCH AS BASS, CATFISH, SUNFISH, PIKE, WALLEYE.

____COMBINATION OF COLD/COOL/WARM WATER FISHERIES ALL WELL REPRESENTED

STREAM ORDER: ____FIRST ____SECOND ____THIRD ____FORTH

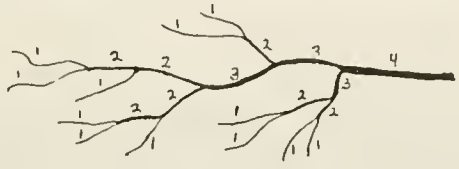
YOU SHOULD USE A TOPO. MAP TO DETERMINE THIS.

TWO OR MORE FIRST ORDER STREAMS BECOME A SECOND ORDER.

TWO OR MORE SECOND ORDER STREAMS BECOME A THIRD ORDER.

TWO OR MORE THIRD ORDER STREAMS BECOME A FOURTH ORDER.

ETC...



FLOW REGIME:

____EPHEMERAL, FLOWS ONLY DURING RAINSTORMS OR PEAK SPRING RUNOFF.

____INTERMITTENT, SEASONAL FLOWS DURING WET WEATHER, SPRING RUNOFF OR FLOWS YEAR ROUND EXCEPT FOR POINTS OF SUBSURFACE FLOW.

____PERENNIAL, FLOWS YEAR ROUND, LITTLE OR NO SUBSURFACE FLOW.

****

ADDITIONAL INFORMATION - COMPLETED BY FIELD PERSONNEL IF KNOWN, OTHERWISE COMPLETED BY WQB.

MT WATER BODY ID #:_____COUNTY FLAG:_____STREAM CLASSIFICATION: A, B OR C_____EPA REACH #_____

BENEFICIAL USES: DRINKING WATER____, STOCK WATER____, FISHERIES____, OTHER_____

IMPAIRMENT SEVERITY: ____MINOR OR NO INTERFERENCE ____THREATENED, NO INTERFERENCE BUT DOWNWARD TREND ___MODERATE, SOME INTERFERENCE BUT USE NOT PRECLUDED ____SEVERE, USE PRECLUDED

WERE WATER SAMPLES OBTAINED? YES, NO. IF YES, WHAT ANALYSES WILL BE PERFORMED? WHAT PRESERVATIVES WERE USED?_____

GIVE RESULTS, IF ANY_____

_____

_____

****

[1] RIVER THAT THE STREAM BEING ASSESSED IS A TRIBUTARY TO.

PLEASE CHECK THE MOST APPROPRIATE ANSWER FOR EACH PARAMETER. MAKE SURE TO ELABORATE WHEN ASK OR WHENEVER NECESSARY TO CLARIFY YOUR ANSWER.

GENERAL ASSESSMENT PARAMETERS

1. NATURAL EROSION: (NATEROS) NATURAL EROSION OCCURRING OUTSIDE OF HIGH WATER MARK BUT WITHIN 200' OF THE STREAM. DO NOT BASE THIS RATING ON HUMAN OR STREAM CHANNEL/BANK EROSION. CONSIDER EROSIVE FEATURES SUCH AS LAND SLUMPS/SLIDES, GULLIES/RILLS/SHEETS ETC.
EROSION EVIDENT: ____NONE OR MINOR ____SOME ____MODERATE ____SEVERE [PLEASE ELABORATE]

2. LAND USE: (LAND) HUMAN ACTIVITIES WITHIN THE WATERSHED THAT HAVE THE POTENTIAL TO CREATE NPS POLLUTION.
CHECK ONE OR MORE ITEMS TO DESCRIBE DISTANCE FROM STREAM CHANNEL THAT ACTIVITIES HAVE OCCURRED:
____NO ACTIVITIES HAVE OCCURRED ____GREATER THAN 200' ____50-200' ____LESS THAN 50'

LIST PREDOMINANT ACTIVITIES AND HOW RECENT THE ACTIVITIES ARE (<5, 5-10, >10 YEARS) FOR EACH DISTANCE CATEGORY.
> 200'

50 - 200'

< 50'

3. NONPOINT SOURCE POLLUTION: (NPSP) CONSIDER ONLY THE POLLUTION THAT APPEARS ATTRIBUTABLE TO HUMAN ACTIVITIES. [PLEASE ELABORATE]
POLLUTION EVIDENT: ____NONE ____SOME, THOUGH NOT COMMON ____MODERATE ____SEVERE
(EXAMPLES MIGHT BE SEDIMENT DEPOSITION IN ROAD DITCHES OR BELOW EPHEMERAL TRIBS., MANURE, IRON PRECIPITATES, TRASH ETC.)

4. BANK STABILITY: (BANKS) CONSIDER ALL OBSERVED STREAM BANK EROSION. [PLEASE ELABORATE]
____ NONE OR MINOR EVIDENCE OF BANK EROSION OR FAILURE (<10% OF TOTAL).
____ MODERATE INSTABILITY, MODERATE AREAS OF BANK EROSION OR BANK FAILURE (10-20% OF TOTAL).
____ SUBSTANTIAL INSTABILITY, FREQUENT AREAS OF BANK EROSION OR FAILURE (21-40% OF TOTAL).
____ UNSTABLE, SEVERE BANK EROSION AND FAILURE (>40% OF TOTAL). EROSION OCCURS ON STRAIGHT SECTIONS AND BENDS.
* AVERAGE SIZE OF ERODED BANKS; HEIGHT ____<1' ____1-3' ____>3' LENGTH ____<5' ____5-20' ____>20'
* ARE BANKS ____VERTICALLY EROSIONAL ____UNDERCUT ____SLUMPS OTHER (DESCRIBE)_____
* DOES THE EROSION APPEAR TO PRIMARILY BE THE RESULT OF HUMAN ACTIVITY ? ___YES ___NO

5. SUBSTRATE COMPOSITION: (SUBCOMP) CONSIDER ONLY THE TOP (VISIBLE) LAYER OF SUBSTRATE MATERIAL.
RIFFLE = RELATIVELY SHALLOW, FAST MOVING, WITH BROKEN OR TURBULENT SURFACE, RUN = MODERATE FLOW, WATER SURFACE NOT TURBULENT TO THE POINT OF BEING BROKEN; POOL = SLOW FLOW, SMOOTH SURFACE, GENERALLY DEEPER THAN A RUN OR RIFFLE.

	RIFFLE	RUN	POOL
* LIST THE DOMINANT SUBSTRATE MATERIAL FOR EACH FEATURE: FINES <1/4"DIA., GRAVEL 1/4"-3"DIA., COBBLE/RUBBLE 3"-12"DIA., BOULDERS/BEDROCK >12"DIA.	_____	_____	_____
* ESTIMATE PERCENTAGE OF FINE MATERIAL (<1/4") FOR EACH FEATURE: (25% increments)	_____	_____	_____
* INDICATE THE AREA OF THE CHANNEL WHERE THE MAJORITY OF FINE MATERIAL IS DEPOSITED: EDGE, MIDDLE, DOWNSTREAM OF ROCKS/LOGS, THROUGHOUT	_____	_____	_____

* IS SUBSTRATE MATERIAL CEMENTED (SURROUNDED BY TIGHTLY PACKED FINES)? ____ YES, ____ NO.

MISC. NOTES:

STREAM NAME AND COUNTY_____ DATE_____ SURVEYOR_____

GENERAL ASSESSMENT PARAMETERS CONTINUED...

6. **CHANNEL STABILITY**: (CHANSTAB) CONSIDER SHIFTS IN SUBSTRATE MATERIAL (I.E. SCOURING, DEPOSITION, POOL FILLING).

SCOURING AND DEPOSITION

___ NONE OR MINOR, BARS STABLE AND WELL VEGETATED (<5% AFFECTED BY EITHER PROCESS).
___ SOME SCOUR AT CONSTRICTIONS OR STEEP GRADES, AND/OR POINT BAR ENLARGEMENT BY COURSE GRAVEL. (5-30% AFFECTED).
___ MODERATE SCOUR AND/OR DEPOSITION, POINT BARS ENLARGING BY GRAVEL AND SAND AND SOME NEW BARS FORMING. (31-50% AFFECTED).
___ SEVERE SCOUR AND/OR DEPOSITION OCCURS IN MOST AREAS OF THE STREAM. NEW BAR DEVELOPEMENT BY FINE MATERIAL IS COMMON. (>50% OF THE CHANNEL IS IN THE STATE OF FLUCTUATION)
[NOTE: "NEW" DEPOSITINAL MATERIAL SHOULD BE CLEAN (LIGHTER COLORED), LOOSE AND UNVEGETATED]

POOL DEVELOPMENT

___ POOLS COMMON AND/OR WELL DEVELOPED.
___ MINOR POOL FILLING, MOSTLY BY SILT.
___ POOL SIZE DECREASING DUE TO FILLING.
___ POOLS SEVERELY REOUCED OR LACKING DUE TO FILLING.

CHANNEL CAPACITY

___ CHANNEL CONTAINS PEAK FLOWS PLUS MORE IF NECESSARY (W/D <7)
___ CHANNEL CONTAINS MOST PEEK FLOWS (W/D = 8 TO 15)
___ CHANNEL BARELY CONTAINS PEAK FLOWS (W/D = 16 TO 25)
___ CHANNEL CAPACITY GENERALLY INADEQUATE FOR PEAK FLOW. OVERBANK FLOWS COMMON (W/D >25)

7. **STREAMSIDE VEGETATION**: (STRVEG) CONSIDER ALL VEGETATION WITHIN 100' OF ACTIVE (SCOURED) CHANNEL. BRIEFLY DESCRIBE THE STREAMSIDE VEG. COMMUNITY (I.E. DOMINANT SPP., AGE, WIDTH, ETC.)

VEGETATIVE BANK STABILITY: ABILITY OF BANK VEG. TO RESIST EROS. ____GOOD ____FAIR ____POOR

PERCENT BARE GROUND: AMOUNT OF BARE GROUND (EXPOSED MINERAL SOIL) W/IN VEG.ZONE ___<15% ____15-30% ____31-45% ____>45%

AVERAGE WIDTH OF VEGETATIVE ZONE: ____>100' ____76-100' ____51-75' ____25-50' ____<25'
ESTIMATE MINIMUM WIDTH _____' AND MAXIMUM WIDTH _____'

USE AND/OR DAMAGE: CONSIDER NATURAL (I.E. WINDTHROW, DEAD TREES ETC.) OR HUMAN FACTORS (I.E. GRAZING, LOGGING ETC). PLEASE ELABORATE* BY DESCRIBING TYPE OF USE OR DAMAGE OBSERVED.
____NONE OR MINOR ____MODERATE ____SUBSTANTIAL ____SEVERE

STREAM SHADING: CONSIDER HOW MUCH OF THE STREAM IS SHADED BY BANK VEGETATION.
____>75% ____51-75% ____25-50% ____<25%

SEDIMENT FILTERING CAPACITY CONSIDER FACTORS SUCH AS SLOPE AND SEDIMENT SOURCES
____GOOD ____FAIR ____POOR

8. **CHANNEL MODIFIERS**: (CHANMOF) CONSIDER NATURAL AND ARTIFICIAL MATERIALS AND/OR STRUCTURES (IE.ANY MATERIAL OR STRUCTURE THAT HAS FALLEN IN OR BEEN PLACED IN THE STREAM CHANNEL). EXAMPLES OF MODIFIERS ARE BRIDGES, CULVERTS, DEBRIS JAMS, BEAVER DAMS, CAR BODIES, RIP-RAP ETC... **[PLEASE ELABORATE]**
____STRUCTURES/MATERIALS STABLE AND IMPROVING STREAM CONDITION (EX. SED. TRAP, FISH HABITAT, BANK STABILITY.) OR OTHERWISE NOT CAUSING FISH PASSAGE OR STABILITY PROBLEMS.
____STRUCTURES/MATERIALS GENERALLY STABLE EXCEPT DURING FLOODS; RELATED STABILITY PROBLEMS MINOR.
____STRUCTURES/MATERIALS HAVE GOOD POTENTIAL TO BE MOVED WITH HIGH TO MODERATE FLOWS. THESE FEATURES MAY RELEASE SEDIMENT INTO THE SYSTEM AND/OR CAUSE BANK OR CHANNEL EROSION.
____STRUCTURES/MATERIALS UNSTABLE AND/OR CAUSING SEVERE BANK OR CHANNEL EROSION.

DESCRIBE THE MATERIALS OR STRUCTURES THAT MAY BE MODIFYING THE CHANNEL.

DESCRIBE ANY POSITIVE CONTRIBUTIONS THAT MODIFIERS ARE MAKING TO THE STREAM (EX. FISH COVER, STABLE SED. TRAPS, BANK STABILIZATION ETC.)

DESCRIBE ANY NEGATIVE CONTRIBUTIONS THAT MODIFIERS ARE MAKING TO THE STREAM (EX.BANK/CHANNEL EROSION, FISH BARRIERS, UNSTABLE SEDIMENT TRAPS, ETC)

IMPAIRMENT INDICATORS
(IF IMPAIRMENTS ARE EVIDENT AND CONCENTRATED IN A SPECIFIC AREA, PLEASE NOTE LOCATIONS ON MAP)

TURBIDITY
CLEAR___ SLIGHTLY OFF COLOR___ CLOUDY___ OPAQUE___ COLOR:_____

WATER SURFACE OILS
NONE____, SLIGHT____, MODERATE____, SEVERE____
SLICK___, SHEEN___, FLECKS____, OTHER_____ SOURCE, IF KNOWN _____

PRECIPITATES OTHER THAN SEDIMENT ON CHANNEL BOTTOM
NONE____, SLIGHT____, MODERATE____, PROFUSE____ COLOR:_____

SALINIZATION
___ NONE EVIDENT:
___ SOME: EVIDENCE OF SALINITY IS PRESENT IN THE WATERSHED HOWEVER NO SALT CRUSTS WERE OBSERVED WITHIN 100' OF THE STREAM.
___ MODERATE: SALT CRUSTS PRESENT <100' FROM THE STREAM. MAY BE MINOR EVIDENCE OF SALTS ON THE STREAM BANK. PLANT DIVERSITY AND ABUNDANCE MAY BE REDUCED OR DOMINATED BY SALT TOLERANT SPECIES (I.E. SALTGRASS, RABBIT BRUSH, FOXTAIL BARLEY, W. WHEATGRASS).
___ SEVERE: SALT CRUSTS COMMON WITHIN 100' OF THE STREAM OR ON STREAM BANKS. VEGETATION MAY BE SEVERELY REDUCED DUE TO SALT. SALT DEPOSITS MAY BE EVIDENT ON STREAM ROCKS.

FOREIGN DEBRIS: CONSIDER MATERIALS SUCH AS GARBAGE, MANURE, LOGGING SLASH, ETC. AND POSITION RELATIVE TO STREAM CHANNEL.

LOCATION OF DEBRIS RELATIVE TO DISTANCE FROM CHANNEL	AMOUNT (N = NONE, P = PRESENT, C= COMMON, E = EXCESSIVE)	POTENTIAL TO REACH CHANNEL (L = LOW, M = MOD., H = HIGH)
___ >200' FROM STREAM CHANNEL.	_____	_____
___ 50-200' OF STREAM CHANNEL.	_____	_____
___ < 50' FROM THE STREAM CHANNEL.	_____	_____
___ MATERIAL PRESENT ON BANKS AND IN THE STREAM CHANNEL.	_____	_____

* DESCRIBE THE MATERIAL OBSERVED.

WATER ODOR
NONE___, SLIGHT___, MODERATE___, STRONG___
SEWAGE___, PETROLEUM___, CHEMICAL___, NATURAL___, OTHER_____

DEWATERING: AS A RESULT OF IRRIGATION OR NATURAL FACTORS SUCH AS SUBSURFACE FLOWS.
___ NO APPARENT WATER LOSS (IRRIGATION MAY BE SUPPLEMENTING BASE FLOW)
___ WATER LOSS NOTICEABLE, HOWEVER FLOWS ARE ADEQUATE TO SUPPORT AQUATIC ORGANISMS.
___ FLOW WILL SUPPORT AQUATIC ORGANISMS, THOUGH HABITAT, ESPECIALLY RIFFLES IS DRASTICALLY REDUCED.
___ CHANNEL MAY BE DRY OR FLOW LOW ENOUGH TO PRECLUDE OR SEVERELY IMPAIR AQUATIC ORGANISMS.
* SUSPECTED CAUSES: NATURAL_____HUMAN-CAUSED_____
* WERE IRRIGATION RETURN FLOWS OBSERVED? YES____ NO____ IF YES, RATE TURBIDITY H__ M__ L__
* STREAM TEMPERATURE? ABOVE RETURN_____ BELOW RETURN_____

AQUATIC ORGANISMS
FISHERIES
* WERE FISH OBSERVED? YES____ NO____ IF YES, ____PRESENT, ____COMMON, ____ABUNDANT. SPECIES, IF KNOWN_____
* DID FISH EXHIBIT ABNORMAL BEHAVIOR? YES____ NO____
* WERE ANY FISH BARRIERS (IMPENETRABLE BLOCKAGES >3' HEIGHT) OBSERVED? YES____ NO____ BE SURE AND LOCATE BARRIERS ON MAP.

AQUATIC PLANT GROWTH
ABSENT____ PRESENT/NOT COMMON____ COMMON____ ABUNDANT____
DOES PLANT GROWTH APPEAR NORMAL GIVEN THE SEASON AND NATURAL STREAM CONDITIONS? YES____ NO____
IS ALGAE FILAMENTOUS? YES_____ NO_____
WHAT COLOR IS THE ALGAE? _____

PLEASE ANSWER THE FOLLOWING QUESTIONS
- WAS WATER SURFACE FOAM >3" HIGH OBSERVED? YES____ NO____

- HAS CHANNEL BEEN ARTIFICIALLY MODIFIED? CONSIDER ONLY PRACTICES SUCH AS DREDGING, STRAIGHTENING, AND CHANNELIZATION.
  YES___ NO___
  IF YES, INDICATE THE TYPE OF MODIFICATION_____ AND APPROXIMATELY HOW RECENT?
  <5YRS._____ 5-10YRS._____ >10YRS_____
- HAVE THE MODIFIED PORTIONS OF THE CHANNEL STABILIZED? YES____ NO____.

- WERE POINT SOURCES OBSERVED? YES____ NO____ IF YES, PLEASE DESCRIBE AND RECORD LOCATION ON MAP

STREAM NAME AND COUNTY_____ DATE_____ SURVEYOR_____

BEST MANAGEMENT PRACTICES (BMP'S) AND LAND USE CHARACTERISTICS (200' EITHER SIDE OF STREAM)

PLEASE RATE THE FOLLOWING TO THE BEST OF YOUR KNOWLEDGE. GENERALLY CONSIDER BMP'S TO BE ANY MEASURES INCORPORATED WITH LAND USE ACTIVITIES THAT MAY HELP PROTECT WATER RESOURCES FROM NPS POLLUTION.

	. EST % OF TOTAL AREA RELATIVE TO DISTANCE FROM STREAM		HAVE BMP'S BEEN APPLIED Y/N*		RATE EFFECTIVENESS OF BMP'S*	
LAND USES	0-50'	50-200'	0-50	50-200'	0-50'	50-200'
NON-IRRIGATED CROP						
IRRIGATED CROP						
GRAZING						
FEEDLOTS						
TIMBER HARVEST						
ROADS (% IS OPTIONAL)						
SURFACE MINING						
SUBSURFACE MINING						
URBAN						
OTHER_____.						
OTHER_____.						

*APPLICATION OF BMP'S

Y (YES) THE MAJORITY OF EACH PARTICULAR LAND USE IN THE REACH HAS BMP'S APPLIED.

N (NO) THE MAJORITY OF EACH PARTICULAR LAND USE IN THE REACH DOES NOT HAVE BMP'S APPLIED.

* BMP EFFECTIVENESS

1 MORE THAN ADEQUATE PROTECTION

2 ADEQUATE PROTECTION

3 MINOR AND/OR SHORT TERM IMPACTS

4 MAJOR AND/OR LONG TERM IMPACTS

PLEASE ELABORATE:

WHICH BMP'S WERE OBSERVED?

WHAT BMP'S NEED TO BE APPLIED TO IMPROVE THE SITUATION?

WHAT IMPACTS WERE OBSERVED? WHAT IS THE POTENTIAL FOR CORRECTION? G=GOOD, F=FAIR, P=POOR

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PUBLIC COMMENTS AND DHES RESPONSES
ASSESSMENT REPORT
(Condensed)

ASSESSMENT REPORT COMMENTS "C", SOURCES "( )" AND PROPOSED RESPONSES "R"

C: IDENTIFY SPECIFIC SOURCES OF POLLUTION. (MEIC)
R: THIS HAS BEEN DONE WITHIN CONFINES OF INVENTORY INFORMATION.

C: IDENTIFY RESPONSIBLE PARTY(S). (MEIC)
R: PARTIES NOT EASILY IDENTIFIED IN NONPOINT PROBLEMS AND EVEN HARDER TO DETERMINE SHARE OF RESPONSIBILITY.

C: IDENTIFY AND PRIORITIZE WATER QUALITY PROBLEMS WITHIN BASINS. (DFW&P)
R: WE AGREE AND WILL DO AS ADDITIONAL INFORMATION BECOMES AVAILABLE.

C: THE BIOLOGICAL IMPAIRMENT OF LIME CREEK IS NOT A REPRESENTATIVE PROBLEM OF SILVICULTURAL ACTIVITIES AND BETTER MORE REPRESENTATIVE SILVICULTURAL ACTIVITIES COULD BE SUBSTITUTED. (USFS)
R: WE AGREE AND WILL REMOVE LIME CREEK AS A DEMONSTRATION PROJECT AND SUBSTITUTE ANOTHER PROJECT RECOMMENDED FROM THE EQC, BLM, USFS.

C: NEED MORE UNIFORM ASSESSMENT OF WHAT CONSTITUTES IMPAIRMENT SO THAT IT IS MORE UNIFORM STATEWIDE. (PRIVATE)
R: IMPAIRMENT LEVELS USED REFLECT OFFICIAL ASWIPCA TERMINOLOGY AND DEFINITION. WE DID ADD DEFINITIONS OF IMPAIRMENT FOR EDIFICATION.

C: NEED BETTER IDENTIFICATION OF STREAM AND REACH IMPAIRMENT LOCATIONS. (PRIVATE)
R: WE ARE WORKING ON THIS AND WHEN WE GET OUR WATER BODY TRACKING SYSTEM OPERATIONAL, IT SHOULD HELP WITH THIS PROBLEM.

C: PARTIALLY EFFECTIVE IS NOT A GOOD DESCRIPTOR OF EFFECTIVENESS. (USFS)
R: USED STANDARD ASWIPCA TERMINOLOGY. TO SORT OUT THE INDIVIDUAL PARTS OF PROGRAMS AND RATE IN A MORE INTENSIVE MANNER, WE RESERVED THE OPTION TO REVIEW ANY OF THE FEDERAL PROGRAMS FOR CONSISTENCY IN OUR MANAGEMENT PLAN.

C: DON'T OVERLAP EQC EFFORT AND MANAGEMENT PLAN EFFORT. (PRIVATE)
R: AGREE. WE HOPE TO TAKE EQC EFFORT AND BUILD UPON IT SO THAT FORESTRY NONPOINT SOURCE PROGRAM IS CURRENT AND OF HIGH QUALITY.

C: MONTANA SHOULD REQUEST LIST OF ENDANGERED SPECIES BY REACH FROM THE US FISH AND WILDLIFE SERVICE. (EPA)

R: WE DID THIS. THERE CURRENTLY ISN'T ANY RARE AND ENDANGERED FISH SPECIES. AS THE ASSESSMENT INFORMATION IS UPDATED, WATERS WITH SPECIES OF SPECIAL CONCERN WILL BE REEVALUATED.

C: NEED TO INCORPORATE INFORMATION FROM THE WATERBODY SYSTEM AS IT BECOMES AVAILABLE. (EPA)

R: AGREE.

C: FINAL REPORT SHOULD REFLECT PUBLIC PARTICIPATION PROCESS. (EPA)

R: AGREE.

C: HAS LIBBY DAM OPERATION BEEN ASSESSED FOR IMPACT ON WATER QUALITY? (EPA)

R: YES.

C: GRAZING BMPS ARE NOT SPECIFICALLY DISCUSSED. SCS, USFS AND BLM ALL HAVE GRAZING BMPS - WHICH WILL MONTANA USE? (EPA)

R: GRAZING BMPS WERE DISCUSSED AND SPECIFICALLY CONSIDERED UNDER AGRICULTURAL BMPS. MONTANA OPTED FOR SCS BMPS AS THE ONES TO BE USED.

C: LITTLE INFORMATION ON PESTICIDE CONTAMINATION IS INCLUDED. HOW ABOUT FISH KILLS? (EPA)

R: ADDITIONAL EDITING HAS BEEN ADDED TO CLARIFY THIS ISSUE. THERE HAVE BEEN SEVERAL LOCALIZED FISH KILLS RELATED TO HERBICIDES AND THESE HAVE BEEN DEALT WITH THROUGH EXISTING REGULATIONS AND FINES LEVIED AS APPROPRIATE.

C: APPARENTLY LITTLE EFFORT WAS MADE TO OBTAIN WATER QUALITY DATA FROM THE FOREST SERVICE OR THE MONTANA DEPARTMENT OF FISH, WILDLIFE, AND PARKS. (WILDERNESS SOCIETY)

R: USFS AND DFW&P DATA WAS SOLICITED AND UTILIZED.

C: THE ASSESSMENT DOES NOT ADDRESS WATER QUALITY IN SMALL WETLANDS, ESPECIALLY THE WETLANDS OF THE PRAIRIE POTHOLE REGION. AGRICULTURAL CHEMICAL RESIDUES AND SEDIMENTS AND SALTS IN IRRIGATION RETURN FLOWS MAY BE IMPORTANT SOURCES OF WATER QUALITY DEGRADATION IN THESE WETLANDS. (USF&WS)

R: AS MORE SPECIFIC INFORMATION CAN BE DEVELOPED, WE WILL GIVE THIS ASPECT OF WATER QUALITY CAREFUL CONSIDERATION AND WILL UPDATE THE PLAN AND ASSESSMENT TO REFLECT SAME.

PUBLIC COMMENTS AND DHES RESPONSE
DRAFT MANAGEMENT PLAN
(Condensed)

MANAGEMENT PLAN COMMENTS "C", CONTRIBUTOR "( )" AND PROPOSED RESPONSE "R"

C: MANAGEMENT PLAN FAILS TO MEET LEGISLATIVE INTENT OF 319 BECAUSE OBJECTIVES CAN ONLY BE ACCOMPLISHED THROUGH A REGULATORY RATHER THAN A VOLUNTARY PROGRAM. (MEIC)
R: YOUR OPINION IS NOTED.

C: DEMONSTRATION PROJECTS SHOULD BE DELETED FROM THE MANAGEMENT PLAN. (MEIC)
R: DISAGREE. DEMONSTRATION PROJECTS ARE LISTED AS ONE OF THE ACTIVITIES TO BE ENCOURAGED AND USED BY THE STATES TO HELP IMPLEMENT THE NPS PROGRAM AND THERE IS NO NEED FOR MONTANA TO LIMIT ITS POTENTIAL RESOURCES FOR THE IMPLEMENTATION PHASE.

C: DEEMPHASIZE EDUCATION AND INCREASE EMPHASIS ON MONITORING. (MEIC)
R: MONITORING IS CRITICAL BUT DON'T NEED TO DEVALUE OTHER ASPECTS OF PROGRAM TO PROPERLY EMPHASIZE.

C: HELENA VALLEY AQUIFER GROUNDWATER PROJECT SHOULD BE SUPPORTED AND FUNDED WITH 319 FUNDS IF AVAILABLE. (LEWIS AND CLARK HEALTH DEPARTMENT)
R: AGREE. GROUNDWATER PROGRAMS SUCH AS THIS ARE SUPPORTABLE UNDER THE 319 PROGRAM.

C: PLAN SHOULD PRIORITIZE PROBLEMS AND PROPOSED RESOLUTIONS DOWN TO A BASIN LEVEL. (DFW&P)
R: AGREE. AS PLAN BECOMES OPERATIONAL AND MORE AND BETTER DATA AND FUNDS BECOME AVAILABLE THIS WILL BE POSSIBLE.

C: MORE FEDERAL AND STATE FUNDING FOR A NETWORK OF WATER QUALITY MANAGERS. (DFW&P)
R: AS FUNDING BECOMES AVAILABLE THIS IDEA CAN BE BETTER EVALUATED.

C: LIME CREEK IS NOT TYPICAL SILVICULTURAL PROBLEM. PICK ONE THAT IS. (USFS), (EPA),(DSL)
R: AGREE.

C: DEFINITION OF REASONABLE SHOULD BE UPDATED WHEN FINALIZED. (USFS)
R: AGREE.

C: VOLUNTARY VS MANDATORY IS RIGHT. (STOLTZE)
R: AGREE.

C: PREVENTION IS PROPERLY STRESSED. (DFW&P)
R: AGREE.

C: EFFECTIVENESS OF PROGRAMS QUESTIONED BECAUSE VOLUNTARY VS MANDATORY. (THE WILDERNESS SOCIETY)
R: ALL OF THE NPS CATEGORIES HAVE ELEMENTS OF MANDATORY CONTROL WRITTEN IN THE FABRIC OF THE VOLUNTARY PROGRAMS I.E. SB310, MONTANA WATER QUALITY ACT ETC.

C: BMPS SHOULD BE DETERMINED AND ENFORCED BY AGENCIES IN CHARGE OF PROTECTING WATER QUALITY NOT THE ENTITIES TRYING TO MINIMIZE LOGGING COSTS. (WILDERNESS SOCIETY)
R: IN MONTANA WE DON'T CARE WHO COMES UP WITH A BETTER IDEA SO WE LET THOSE GOVERNED HELP, HOWEVER THE DHES WILL BE THE ENFORCING AGENCY.

C: WATER QUALITY PROBLEMS SHOULD BE VERIFIED AS FINANCIAL RESOURCES ALLOW. (CHAMPION)
R: AGREE.

C: EDUCATION IS PROPERLY STRESSED. (STOLTZE)
R: AGREE.

C: MANAGEMENT PLAN PROPERLY STRESSES UPDATING WATER QUALITY INFORMATION. (STOLTZE)
R: AGREE.

C: MANAGEMENT PROGRAMS SHOULD INCLUDE ALL SIGNIFICANT SOURCES AND MUST DESCRIBE A PROPOSED OVERSIGHT PROGRAM FOR SAME. (EPA)
R: WE DID THIS IN THE DRAFT AND WILL NOW ADD ADDITIONAL EDITORIAL COMMENTS TO MAKE THEM MORE APPARENT.

C: STRATEGY FOR EVALUATING NONPOINT MANAGEMENT PROGRAM EFFECTIVENESS AND MAKING ANY NECESSARY MID-COURSE CHANGES SHOULD BE IDENTIFIED. (EPA)
R: THIS WAS DONE IN THE DRAFT MILESTONES. THESE ARE FURTHER EXPLAINED FOR EDIFICATION.

C: EDUCATIONAL COMPONENTS SHOULD BE INTEGRATED INTO EACH NONPOINT SOURCE CATEGORY. (EPA)
R: THIS WAS DONE IN DRAFT FORM. WE LEFT IT ALSO AS A COMPOSITE ITEM SO THAT EDUCATIONAL COMPONENTS COULD BE BETTER TRACKED BY OUR STATE. WE ADDED ADDITIONAL REMARKS TO MAKE THIS MORE APPARENT.

C: HAS THE STATE CONSIDERED A SYSTEM TO RANK AND PRIORITIZE WATERSHEDS FOR BMP IMPLEMENTATION PROJECTS? (EPA)
R: A SYSTEM IS IN PLACE AND WAS DESCRIBED AND USED. EDITORIAL COMMENTS HAVE BEEN ADDED TO THE TEXT TO BETTER DESCRIBE THIS SYSTEM.

C: PRIORITY STREAMS SHOULD BE IDENTIFIED IN THE MANAGEMENT PLAN. (EPA)

R: STREAMS FOR 1989 FISCAL YEAR WERE LISTED. EACH YEAR AN NEW INFORMATION IS DEVELOPED NEW STREAMS WILL BE SELECTED AND SUBJECTED TO REVIEW BY THE PUBLIC AND THE TASK FORCE MUCH THE SAME AS THIS YEAR.

C: BMPS WHICH WILL BE ASSISTED, ENCOURAGED OR REQUIRED SHOULD BE IDENTIFIED. (EPA)

R: BMPS TO BE ASSISTED OR ENCOURAGED WERE LISTED. BECAUSE WE HAVE SELECTED A VOLUNTARY PROGRAM NO BMPS ARE REQUIRED. WITHIN DEMONSTRATION PROJECTS SPECIFIC BMPS WILL BE SELECTED BY INTERAGENCY TEAMS AND LANDOWNERS WHICH WILL BE INSTALLED.

C: IS THERE AN INTEGRATED STATEWIDE SILVICULTURAL NONPOINT SOURCE PROGRAM? (EPA)

R: YES. WE ARE PROUD OF THE EQC EFFORT IN MONTANA. WE INTEND TO UTILIZE THIS EFFORT AND CONTINUE THIS PROGRAM. FURTHER EDITING WAS DONE TO CLARIFY QUESTIONS.

C: WHICH SET OF BMPS ARE RECOMMENDED FOR FORESTRY. (EPA)

R: THE BMPS NOW IN FORCE ARE THOSE OF THE CUMULATIVE EFFECTS COMMITTEE. WHEN THE EQC EFFORT IS COMPLETED WE INTEND TO ADOPT THEM. BMPS FOR ALL CATEGORIES ARE SUBJECT TO UPDATE AND IMPROVEMENT AS PART OF THE MID COURSE ADJUSTMENTS. FORESTRY IS NO EXCEPTION.

C: IT IS UNLIKELY THAT FUNDS CAN BE AWARDED FOR SILVICULTURAL OR MINING PROJECTS UNLESS THEY ARE MORE SPECIFIC AS TO THE RELATIONSHIP IN THE ENTIRE NPS PROGRAM. (EPA)

R: WE UNDERSTAND THAT THE PLACE FOR MORE SPECIFIC INFORMATION IS IN THE GRANT REQUEST PROCESS.

C: SEVERAL STREAMS ARE IMPACTED BY DREDGE AND PLACER MINING IDENTIFIED IN ASSESSMENT. WILL THESE STREAMS BE ADDRESSED IN THE MANAGEMENT PROGRAM? (EPA)

R: YES. THEY ARE ADDRESSED.

C: HAS PETROLEUM BEEN ADDRESSED? (EPA)

R: MORE INFORMATION ON THIS SOURCE IS BEING ADDED TO THE PLAN.

C: IMPROVED EFFORT TO IDENTIFY OUTPUTS AND FUNDING SOURCES FOR THE ENTIRE FOUR YEARS. (EPA)

R: WE WILL EXPAND THIS SECTION. HOWEVER THE FIRST YEAR MUST BE TAKEN CARE OF BEFORE THE NEXT YEARS PROGRAMS MAKE SENSE. E.G., ANNUAL PLANS WITHIN A FOUR YEAR PLAN MAKES SENSE. A FOUR YEAR PLAN TO COMPLETE ONE YEARS WORK DOESN'T.

C: SOURCES AND FUNDING LEVELS AVAILABLE FOR IMPLEMENTATION SHOULD BE LISTED FOR EACH OF THE FOUR YEARS. (EPA)

R: SOURCES WERE LISTED. FUNDING LEVELS WERE NOT LISTED BECAUSE IN TERMS OF WATER QUALITY THOSE LEVELS DON'T EXIST. EXISTING STATE LEVELS WERE DEFINED.

C: MONTANA'S PLAN APPEARS TO HAVE A VOID IN BMPS FOR GRAZING. (EPA)
R: THEY WERE COVERED AT THE SAME INTENSITY AS FOR OTHER AGRICULTURAL BMPS.

C: A PUBLIC PARTICIPATION SUMMARY SHOULD BE INCLUDED IN THE PLAN. (EPA)
R: THIS IS ACCORDING TO PLAN.

C: IT WOULD BE APPROPRIATE TO UPDATE AND REVISE MOU'S WITH DESIGNATED AGENCIES AFTER APPROVAL OF THE MANAGEMENT PLAN. (EPA)
R: THIS WAS ONE OF OUR MILESTONES.

C: THE PROCESS FOR IMPLEMENTING MOU'S SHOULD BE BETTER DEFINED. (EPA)
R: ADDITIONAL EDITING IS BEING DONE.

C: CONSERVATION DISTRICTS ARE THE DESIGNATED AGENCY FOR ALL NONPOINT CATEGORIES. IS THIS THE PROPOSED DIRECTION FOR THE FUTURE? (DSL)
R: YES. HOWEVER WE WOULD BE INTERESTED IN SEEING HOW AGENCIES WITH MORE EXPERTISE IN INDIVIDUAL CATEGORIES COULD BE INTEGRATED WITH THEM TO COME UP WITH BETTER ANSWERS AND TEAMWORK.

C: THE DISCUSSION OF THE CUMULATIVE WATERSHED EFFECTS COOPERATIVE AND HJR-49 IS INCLUDED IN THE SECTION ON FEDERAL PROGRAMS. IS THIS APPROPRIATE? (DSL)
R: THIS SECTION WAS MOVED TO THE SECTION ON SILVICULTURE WHERE IT IS APPROPRIATE.

C: EPA WOULD BE INTERESTED IN RECEIVING MONTANA'S PERSPECTIVE REGARDING THE EFFECTIVENESS OF USDA PROGRAMS IN ADDRESSING MONTANA'S WATER QUALITY PROBLEMS. (EPA)
R: WE HAVE RESERVED THE RIGHT TO REVIEW ALL USDA PROGRAMS FOR CONSISTENCY WITH THE STATE'S NONPOINT SOURCE PROGRAM.

C: SUGGEST A TASK FORCE TO DISCUSS STATE AND FEDERAL (USDA) PROGRAMS AND INCONSISTENCIES THAT PREVENT OR DELAY RECLAMATION EFFORTS ESPECIALLY IN TERMS OF ADDRESSING SALINITY. (SALINITY CONTROL ASSOC.)
R: THIS WILL BE PART OF OUR REVIEW OF USDA PROGRAMS.

C: SUGGEST USING RESOURCE MANAGEMENT SYSTEM APPROACH. (SCS)
R: THIS IS THE SYSTEM WE HAVE SUGGESTED FOR AGRICULTURAL BMPS. A RESOURCE MANAGEMENT SYSTEM FOR AN INDIVIDUAL'S RESOURCE WITHIN A WATERSHED MAY BE MADE UP OF ONE OR MORE BMPS.

C: IF IMPAIRED WATERBODIES ARE TO BE PRIORITIZED, THERE NEEDS TO BE A WEIGHTING SYSTEM DEVELOPED FOR THE MONTANA REACH TRACKING SYSTEM, DATA INPUT FORM. (SCS)
R: WE ARE WORKING ON THIS ONE. HOPEFULLY THE TASK FORCE WILL HELP.

MEMORANDUM OF UNDERSTANDING
to IMPLEMENT the
WATER QUALITY MANAGEMENT PROGRAM
on the
NATIONAL FORESTS
in the
STATE OF MONTANA

Montana Department of Health
and Environmental Sciences

Forest Service
U.S. Department of Agriculture

This Memorandum of Understanding has been entered into by and between the Montana Department of Health and Environmental Sciences hereinafter called the Department unless otherwise noted, and the U.S. Department of Agriculture, Forest Service, Northern Region, hereinafter called the Forest Service.

WHEREAS, the Department, under section 75-5-213 MCA, is directed to advise, consult, and cooperate with other States, other State and Federal agencies, affected groups, political subdivisions, and industries in the formulation of a comprehensive plan to prevent and control water pollution, and

WHEREAS, the Forest Service under the Act of June 12, 1960 (16 U.S.C. 528), as amended, and Public Law 93-378 (16 U.S.C. 1601), as amended, is directed to regulate the occupancy and use of the National Forests, and

WHEREAS, the Forest Service under the Clean Water Act (33 U.S.C. 1251 et seq.), is directed to meet State, interstate, and local sustantive as well as procedural requirements respecting control and abatement of pollution, and

WHEREAS, the Forest Service under Public Law 91-190 is directed to utilize a systematic interdisciplinary approach in planning and in decision making, to evaluate and to report environmental impacts of proposed actions, and to provide alternatives to those actions, and

WHEREAS, the Forest and Rangeland Renewable Resources Planning Act of 1974 (88 stat. 476, et seq.), known as RPA, as amended by the National Forest Management Act of 1976 (90 stat. 2949 et seq.) (16 U.S.C. 1601 et seq.), known as NFMA, provides for the interdisciplinary development, the content, use, review, revision and amendment of the National Forest System resource planning process and also provides for the establishment of National, Regional, and local resource goals on the basis of the assessed capability of local and resource planning of State and local governments, including Indian Tribes, and other Federal agencies, and

WHEREAS, the Forest Service and the Department mutually desire:

1. to meet the goals as defined by Congress in the Clean Water Act;

2. to minimize duplication of effort and to develop and facilitate complimentary pollution control and abatement programs for forested lands in Montana;

3. to carry out the objectives and policies of the Nonpoint Pollution Strategies and the Joint Policy Statement of April 2, 1976, between the Environmental Protection Agency and the Forest Service;

4. to assure adequate control of pollution sources in Montana by development and implementation of the waste treatment management planning process (sec. 208, P.L. 92-500);

5. to continue to recognize the Forest Service, Region 1, including its administrative units, particularly the individual National Forests, as the "Management Agency" (40 CFR 131.11(0)) for the National Forests.

NOW, THEREFORE, the parties agree as follows;

1. The FOREST SERVICE agrees to :

a. Provide to the Department, by January 1 of every even-numbered year, an assessment of water quality on National Forest lands for the previous two years to include:

(1) Descriptions of water quality problem stream segments (similar to those presented in the appendix of the Department's 305(b) report, including name, location, upstream and downstream limits, drainage basin, probable impaired use(s), suspected pollutants and pollution sources and (2) available water quality data (chemical, physical, biological) supporting the designation of polluted stream segments under section 1.a.(1) above; and a brief narrative description of current water quality programs designed to prevent pollution and to clean up the problems identified under section 1.a.(1) above, including descriptions of major accomplishments during the previous biennium.

b. provide the opportunity for field review of projects at the request of the Department to resolve problems at the site with the District Ranger or Forest Supervisor, or their representatives.

c. expand In-Service education and training to increase employees' sensitivity to and awareness of the importance of maintaining water quality and of the requirements of State and Federal water quality regulations. Recognize the value of expertise from the Department and EPA, or other appropriate agencies and/or institutions in Forest Service water quality training and education sessions as instructor and/or resource people.

d. accomplish water quality management requirements by:

(1) developing, modifying and implementing Forest plans, as appropriate.

(2) recognizing the State's authority for developing and maintaining water quality standards.

(3) monitoring and evaluating selected management activities to determine how well objectives are being or have been met, followed by timely incorporation of appropriate adjustments to reasonably insure maintenance of environmental quality and protection of beneficial uses.

(4) maintain and improve the Soil and Water Conservation Practices handbook.

e. furnish copies to the Department of all Notices of Intent and proposed Plans of Operation (36 CFR 228-A); Material Sale Contracts (36 CFR 228-B); phosphate lease Mining Plans; or other mineral related proposals which may involve a surface or groundwater discharge and to inform the minerals operator through information supplied by the Department of the requirements concerning effluent limitations, water quality standards, treatments, toxic or hazardous substances and required certification or permits for activities on National Forest System Lands.

f. follow the FG 124 process outlined in the MOU with the Montana Department of Fish, Wildlife and Parks to meet the intent of the Montana Stream Preservation Act.

2. The DEPARTMENT agrees to:

a. Coordinate Department water quality management planning and implementation with the Forest Service when National Forest lands are involved.

b. notify the appropriate Forest Supervisor of those projects and programs for which the Department wishes to furnish advice and assistance.

d. provide instructors and resources for training and education sessions;

e. coordinate and consolidate with other interested State or local departments or agencies the field review of projects to minimize the impact on people and time on the individual National Forests.

f. promptly review mineral operation proposals and make timely comments, recommendations or notification of requirements to the operator and Forest Service. The Forest Service is generally required to respond to operating plans within 30 days (36 CFR 228.5a) of receipt of plans and in 15 days (36 CFR 228.4) for Notices of Intent.

g. provide information to the Forest Service which can be made available to mineral operators to explain State water quality requirements.

3. The FOREST SERVICE and the DEPARTMENT mutually agree:

a. that revisions or amendments to contracts, permits, etc., can be accomplished only in accordance with the provisions of those documents and of the appropriate directives of the Forest Service. (For example; Modifications to Prevent Environmental or Resource Damage [Timber Management]).

b. that either party will provide, on request, technical expertise on a consulting basis not otherwise available to the other party from within its own organization. Such provision must be consistent with the supplying party's program priorities and availability of expertise.

c. that either party will notify the other party, immediately and in writing, of suspected violations of water quality standards, including those resulting from forest practices, mining operations, and spills of hazardous materials, which may adversely impact onsite and/or downstream lands and waters. Both parties will cooperate in recommending, planning, and implementing corrective measures.

d. to periodically review proceedings under this MOU and to negotiate amendments and supplements that shall become effective after written approval by both parties.

e. to coordinate present and proposed water quality monitoring activities within or adjacent to the National Forest and to routinely make available to the other party any unrestricted water quality data and information and to consolidate available water quality data into computerized data storage and retrieval systems so that it is readily accessible to either party.

f. that nothing herein shall be construed as limiting or affecting in any way the authority of the Department in carrying out its legal responsibilities for management or regulation of water quality.

g. that nothing herein shall be construed as limiting or affecting in any way the legal authority of the Forest Service in connection with the administration and protection of National Forest System lands in accordance with Federal laws and regulations.

h. that nothing in the agreement shall be construed as obligating the Forest Service or the Department to expend funds in any contract or other obligation for future payment or services in excess of those available or authorized for expenditure.

i. that the Memorandum of Understanding of September 28, 1979, between the Forest Service and the Department is replaced upon approval of this agreement by both parties.

j. that no member of or delegate to Congress, or Resident Commissioner of the United States, shall be admitted to any share or part of this Agreement, or to any benefit that may arise therefrom.

k. that each and every provision of this Cooperative Agreement is subject to the laws of the State of Montana, the laws of the United States, the regulations of the Secretary of Agriculture, and the regulations of the Board of Health and Environmental Sciences.

l. that this agreement shall become effective as soon as it is signed by the parties hereto and shall continue in force unless terminated by either party upon thirty (30) days notice in writing to the other of intention to terminate upon a date indicated.

IN WITNESS THEREOF, the parties hereto have caused this Cooperative Agreement to be executed.

30 January 1987
Date

JOHN J. DRYNAN, Director
Montana Department of Health
and Environmental Sciences

Jan. 30, 1987.
Date

JAMES C. OVERBAY
Regional Forester, Northern Region
USDA Forest Service, R-1

MEMORANDUM OF UNDERSTANDING

between

Montana State Office, Bureau of Land Management

and

State of Montana, Department of Health and Environmental Sciences

Water Quality Bureau

SECTION I. PURPOSE

The purpose of this agreement supplement is to provide for effective implementation of approved State of Montana Water Quality Management plans on public lands administered by the Bureau of Land Management within Montana. This memorandum expands the responsibilities of both agencies to include the goals of meeting established federal and state water quality standards and BLM implementation of Best Management Practices, wherever feasible. This agreement supersedes and replaces the original Memorandum of Understanding which became effective May 12, 1977. The original agreement will be null and void when this agreement is signed by both parties.

SECTION II. BACKGROUND AND AUTHORITIES

A. Bureau of Land Management

The Federal Land Policy and Management Act of 1976 (PL 94-579) provides BLM authority for inventory and comprehensive planning for all public lands and resources under its jurisdiction. An integral part of this process is water quality consideration, with the mandate that BLM will provide compliance with applicable pollution control laws, including state and federal air, water, noise and other pollution standards and implementation plans. This is consistent with federal responsibilities incorporated in Executive Order 12088 of 10/13/78 relative to water quality standards and effluent limitations from the discharge or runoff of pollutants described in the Clean Water Act of 1977 (PL 95-217).

PL 94-579 prescribes close coordination between BLM and state and local resource planning and implementation agencies. BLM policy relative to coordination of BLM planning with statewide planning conducted under Section 208 of the Clean Water Act of 1977 is outlined in the National EPA/BLM agreement of 1/5/76.

B. Water Quality Bureau

The Montana Water Quality Act, Montana Code Annotated, Sections 75-5-101 through 75-5-636 and the Water Quality Standards, Rule ARM-16-2.14 (10)-S14480 (6)(0) provide the legal authority to the State of Montana for control of point and non-point sources of pollution.

Section 75-5-101 of the Water Quality Act establishes a declared policy of the State to provide a comprehensive program for the prevention, abatement and control of water pollution." Under Section 75-5-605 of the Act, it is unlawful to cause pollution of any state waters. Section 6(0) of the Water Quality Standards rule provides the Department of Health and Environmental Sciences with the authority to order elimination or minimization of pollution resulting from storm drainage, storm sewer discharges, and non-point sources, including irrigation practices, road building, construction, logging practices, overgrazing and other practices.

Protection of existing high quality waters is provided for by the non-degradation policy, Section 75-5-303 of the Water Quality Act. This policy instructs that the Board of Health and Environmental Sciences shall require "that any state waters whose existing quality is higher than the established water quality standards be maintained at that high quality unless it has been affirmatively demonstrated to the board that a change is justifiable as a result of necessary economic and social development and will not preclude present and anticipated use of these waters."

Degradation of water quality as a result of stream dewatering apparently cannot be controlled by DHES under the existing legal and administrative framework of the water pollution control program. The DHES, however, can reserve instream flows for the maintenance of water quality through the reservation provisions of the Water Use Act administered by the Department of Natural Resources. The DHES cooperates with the Department of Fish, Wildlife and Parks and other agencies with instream flow projects. Instream flow reservations are recognized by the DHES as a significant mechanism to the maintenance of state water quality standards.

Montana's Section 208 Water Quality Management Plans recommend Best Management Practices to protect instream water quality and solve existing non-point source pollution problems. Montana's Water Quality Standards and water quality criteria for non-point source pollutants are based, for the most part, on naturally occuring conditions resulting from runoff from developed lands over which all reasonable land, soil and water conservation practices have been applied. The State's approved Water Quality Management Plans recognize these reasonable practices to mean Best Management Practices.

SECTION III. AGENCY ROLES, PROGRAM IMPLEMENTATION, COORDINATION AND IMPLEMENTING AGENCY DESIGNATION

The Bureau of Land Management and Water Quality Bureau (WQB) mutually agree to the following provisions so as to prevent duplication of effort and to provide the necessary coordination to meet the implementation requirements of PL 95-217.

A. Agency Roles

BLM will exercise its statutory authority and responsibility as the lead management agency for planning and implementing natural resource management programs for the protection of water quality on federal lands under its jurisdiction. BLM district offices will incorporate water quality goals and objectives in their land use plans. BLM on-the-ground actions will be designed to:

1. prevent degradation of water quality from non-point source pollution.

2. to the extent practical implement Best Management Practices for water quality protection.

The BLM will coordinate its land use planning activities with the Water Quality Bureau in such a manner as to allow the Bureau effective and timely input into the process. The BLM, where appropriate, will coordinate its water quality monitoring and water reservation activities with the Water Quality Bureau. The BLM will continue to use the BLM/DSL cooperative agreement to insure that land use decisions and mine plan approvals comply with both state and federal water quality laws and will confer with the Water Quality Bureau on matters pertaining to the state's nondegradation policy and water quality standards in its approval actions.

The Water Quality Bureau will provide, to the extent practical, water quality information and technical assistance to BLM relative to water quality management considerations in BLM's land use planning processes. WQB assistance would include, but would not be limited to, joint field investigations of BLM-determined problem areas.

B. Implementation Program

The implementation program has six major components, including (1) non-point source problem assessment; (2) identification and development of Best Management Practices; (3) a public involvement program; (4) implementation mechanisms; (5) a monitoring program; and (6) a program review, evaluation and updating process.

1. Problem Assessment

The problem assessment is divided into two discrete categories which correspond to the implementation concepts of <u>prevention</u> and <u>correction</u> or restoration.

a. Problem Prevention

The sensitive geographic areas that are potential water quality hazards are identified at various BLM planning levels.

For these areas, recommended management is designed to protect water quality and minimize the potential adverse water quality impacts from resource management actions. BLM will identify such sensitive areas on maps of appropriate scale and report to WQB along with existing and recommended management on each area.

b. Problem Correction

The BLM, with assistance from the Water Quality Bureau, will implement the following problem/solution process as a strategy for the management of non-point sources of pollution:

1. Annually identify and update existing and potential non-point source problems;

2. develop a priority list based on problem severity;

3. select and adopt Best Management Practices which can be applied to correct identified problems;

4. establish realistic abatement schedules for the identified problems; and

5. report annually accomplishments to the WQB and EPA.

The BLM and WQB mutually agree to the following timetable of activities:

March 31	Apr. 1-May 30	June 1-July 31	August 1	October 15
Individual Agency reports due to WQB including:	WQB Analysis of multi-agency reports	Joint Agency meeting, objectives including:	WQB updates statewide 208 report	WQB completes 208 report update & feedback to agencies
1. Problem identification and causes		1. Discussion of Agency priorities and solutions		
2. Problem prioritization		2. Review of reports		
3. Selected BMPs		3. Other (followed by joint field investigations of top priority problems)		
4. Abatement schedule				
5. Report of accomplishments				

*Agency report and meetings would include BLM and other 208 cooperation agencies.

2. Best Management Practices

Non-point source water quality problems are best controlled through the implementation of sound resource management practices, commonly referred to as "Best Management Practices" (BMPs) The BLM will attempt to meet or exceed the prescribed state practice criteria and standards as incorporated in the Statewide Water Quality Management Plan.

3. Public Involvement

The Clean Water Act emphasizes the need to insure public involvement in the development and implementation of the standards, plans, and programs which it mandates. Section 101(e) of this act describes the basic framework for public participation which is further delineated in federal regulations (40 CFR 105). The Federal Land Policy and Management Act of 1976 (PL 94-579) and BLM Regulations for Planning (43 CFR 1601.3) also provide for public involvement throughout the planning/decisionmaking and review process. Through this public involvement process, any decisions relating to water quality will be open to the public and subject to review, comment, and appeal.

4. Implementation Mechanisms

The BLM and WQB agree that the implementation of BMPs will be made in conjunction with BLM land management decisions for lands and resources under BLM jurisdiction (currently referred to as Management Framework Plans or Resource Management Plans). These decision documents incorporate an initial water quality management plan which will be periodically revised, updated, and refined during the ongoing, continuous planning process. These decision documents will be provided to the WQB for timely review in accordance with the BLM final regulations for planning consistency with state agency plans, programs and policies (43 CFR 1601.4).

5. Monitoring

Monitoring of Best Management Practices will be performed by BLM to meet two objectives. The first objective is to determine the degree to which BMPs are being implemented in field operations when compared to stated water quality protection plans in the management decision document (MFP or RMP)(43 CFR 1601.5-9). The second monitoring objective is related to the effectiveness of prescribed BMPs. As funds are available, BMPs will be

evaluated to determine if they are having the desired and expected effect on water quality and to guide decisions on possible modifications. This evaluation will be coordinated with WQB water quality monitoring programs to the extent possible.

6. Program Review, Evaluation and Updating

The BLM and WQB agree to meet annually (as discussed under III, B, 1, b above) to evaluate the program and the progress being made. At this annual meeting, the following items (not all-inclusive) will be addressed:

a. All available monitoring information will be reviewed to determine if State water quality management plan goals are being met and to prescribe procedures for more effective program implementation. The BLM will present and discuss land use planning and activity planning commitments which may incorporate BMPs. In addition, the BLM monitoring program will be reported biannually to EPA (305-b) through the WQB, or as mutually agreed.

b. Any proposed revisions or additions of BMPs will be provided prior to the annual meeting by the WQB or other designated state agency for BLM review and comment.

c. Constraints of manpower and funds on immediate and effective program implementation will be discussed.

C. Coordination

The BLM and WQB mutually agree to assign a contact person within each agency to coordinate the execution of this memorandum of understanding.

D. Designation

On the basis of this memorandum of understanding, WQB will recommend that the Governor formally designate BLM as the implementing agency for non-point source pollution control on federal lands under its jurisdiction.

SECTION IV. LIMITATIONS, AMENDMENTS AND TERMINATIONS

A. Limitations

Nothing in this agreement will be construed as limiting or affecting in any way the authority or legal responsibility of the BLM or the state, or as binding either the BLM or state to perform beyond the respective authority of each, or to require either agency to assume or expend any sum in excess of appropriations available.

Nothing in this agreement will be construed as requiring the BLM to complete land use planning documents (Resource Management Plans) ahead of the current schedule and as funded. Any Best Management Practices which may be implemented without completion of such plans may be incorporated into individual resource activity plans and environmental assessment documents.

Each and every provision of this supplement is subject to the laws of the State of Montana and the laws of the United States, and the regulations of the Secretary of the Interior.

B. Effective Date, Amendments and Termination

This Memorandum of Understanding Supplement shall become effective as soon as signed by the parties hereto and shall continue in force unless formally terminated by either party after thirty (30) days' notice in writing to the other of his intention to do so.

Additional amendments or appendices to this agreement may be proposed by either party and shall become effective upon approval by both parties.

Approved:

BUREAU OF LAND MANAGEMENT, USDI

Michael J. Penfold — Date: MAR 31 1986

MONTANA DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

A. C. Knight, Director — Date

SUPPLEMENT TO MEMORANDUM OF UNDERSTANDING
BETWEEN THE BITTERROOT CONSERVATION DISTRICT
AND THE
MONTANA DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

This is a supplement to the Memorandum of Understanding entered into between BITTERROOT Conservation District (CD) and the Montana Department of Natural Resources and Conservation (DNR&C) on the 12th day of September, 19 78. The purpose of this supplement is to provide the basis for a non-point source pollution control program involing the preceding agencies and the Montana Department of Health and Environmental Sciences (DHES).

BITTERROOT Conservation District, DNR&C, and DHES shall cooperate to develop and implement a water quality management plan pursuant to the authorities, responsibilities and goals outlined in Section 208 of the Federal Water Pollution Control Act Amendments of 1972 (P.L. 92-500) and the Federal Clean Water Act of 1977 (P.L. 95-217), and the Montana Water Pollution Control Act (Section 69-4801 et. seq., R.C.M. 1947).

BITTERROOT Conservation District is, by this agreement, designated by the Montana Department of Health and Environmental Sciences, as the non-point source water quality management agency within the District's boundaries with responsibilities as herein enumerated, and DNR&C is assigned the responsibility of state coordination of the efforts of all Montana conservation districts.

Soil conservation and water quality are mutual concerns of the Conservation District, DHES, and DNR&C; therefore, the parties agree as follows:

I. DNR&C shall within statutory, administrative, and funding limitations:

A. Develop jointly with DHES guidelines for the CD's use in developing its water quality plan. These guidelines shall include methods for inventory assessments, planning, and policy alternatives, which when implemented will prevent or correct non-point source pollution problems. DNR&C shall seek the assistance of the Montana Association of Conservation Districts and the Soil Conservation Service (SCS) of the U.S. Department of Agriculture in the development of these guidelines.

B. Provide assistance to the CD in the selection and adoption of best management practices to fit local needs.

C. Cooperate with DHES in providing education, information and other assistance in the area of water quality management to the CD.

D. Serve as state-wide coordinator and act as liaison between the CD, DHES, Environmental Protection Agency (EPA), and other agencies as necessary.

E. Review and evaluate the CD's annual work report.

II. DHES shall within statutory, funding and administrative limitations:

A. Provide upon request technical assistance to the CD in the development of a water quality management plan.

B. Assist in obtaining financial support for the CD for the development and implementation of the water quality management plan. As monies for rural water quality programs become available, DHES shall, to the extent possible, make those funds available to the CD.

C. Cooperate with the CD in arriving at solutions to water quality problems which the CD is unable to solve. Initiate enforcement action as deemed necessary in cases where water quality standards are being violated.

D. Notify the CD of new non-point source problems for possible mitigation by the CD.

E. Cooperate with the CD in documenting non-point source problems and make available as requested water quality monitoring and analyzing services.

F. Work cooperatively with DNR&C in providing education, information, and other assistance to the CD.

G. Keep DNR&C and the CD informed of new developments in non-point source programs.

H. Assist DNR&C in the review and evaluation of the CD's annual work report.

III. The CD shall within statutory and funding limitations:

A. Prepare, with assistance from DNR&C and DHES, a master water quality management plan for the area within the CD's boundaries for the abatement of non-point source problems. The plan shall be updated and revised from time to time. The plan, as a minimum, shall include the following:

(1) identification of existing and potential non-point source problems,

(2) prioritization of severity of problems,

(3) selection and adoption of best management practices which can be applied to correct identified problems, and

(4) establishment of realistic schedules for abatement of the identified problems.

B. Consider acceptance of funds provided for water quality purposes to carry out the planning, administration, education-information, technical assistance, and cost-sharing functions of a water quality management program either unilaterally or in cooperation with agencies with which the CD has working agreements, such as the SCS, Extension Service, Agricultural Stabilization and Conservation Service, DHES, and EPA.

C. Conduct an education-information program within the CD to inform residents of the significance of water quality management. As a part of this program, the CD shall contact landowners with non-point source pollution problems and offer assistance in bringing about a solution.

D. Annually prepare and submit to DNR&C and DHES copies of a work report. The annual work report shall outline accomplishments, next year's goals, budget constraints, etc.

E. Receive complaints of non-point source problems originating within the district and work cooperatively with the landowners to solve the problems. Should the CD be unable to obtain cooperation, the CD shall notify DHES of the situation.

Other provisions, special projects and activities may be included and are attached as exhibit A and incorporated herein by reference.

This supplement to Memorandum of Understanding shall be effective when signed by each of the parties and may be terminated by mutual agreement or by any party upon thirty (30) days notice in writing to the other parties.

Date 8/27/78
9/12/78

Bitterroot Conservation District

By: Leonard L. Peterson
Chairman, District Board of Supervisors

Date 8-31-78

Montana Department of Natural Resources and Conservation

Ted J. Doney
Director

Date 8-31-78

Montana Department of Health and Environmental Sciences

for R. James
Director

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